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ABSTRACT

The methodology used in the evaluation of this unit is the same as that described in SO 000 468. Twenty-seven teachers were selected for the field trial thereby involving approximately 1,250 ninth through twelfth grade students. This unit has five integral activities and two optional ones: 1) Site Selection; 2) A Few American Cities; 3) Local Community Site Considerations; 4) Burges: The Fortunes of a Medieval City; 5) The Story of Portsville; 6) Time-Distance; and, 7) Models of City Form. Some of the specific conceptual objectives are an understanding of: the factors that influence the location and growth of urban settlements; the changing nature of these variables of location and growth; the factors that influence urban land uses; how a number of variables like population and income are likely to be distributed in an urban area; and, the decisions that must often be made with insufficient information. The unit test concerning the attainment of the unit objectives indicate a 10 to 18 per cent increase in understandings and skills. Two exceptions showed an increase of 53 and 3 per cent. The ratings on the effectiveness of the unit as a whole and the individual activities as to student and teacher interest, enjoyment, and student learning are given. A number of revisions are suggested for each activity. See SO 000 468 for a list of the related reports. (SBE)

EDO 46806

HSGP

GROWTH of CITIES

Evaluation Report

1

March 19, 1968

SD 000 411

EDO 46806

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GROWTH OF CITIES:

Evaluation Report

From a Limited School Trial

of a Teaching Unit of the

High School Geography Project

Report Prepared by Dana Kurfman

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March 19, 1968

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NOTE

The High School Geography Project is a course content improvement program in geography sponsored by the Association of American Geographers and supported by the National Science Foundation. The Project's goal is the development of new geography teaching materials at the tenth grade level. Current work is concentrated on development of materials following a course outline on a Settlement Theme.

Further information on the status and plans of the AAG project is available from:

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HIGH SCHOOL GEOGRAPHY PROJECT

PARTICIPATING LIMITED SCHOOL TRIALS TEACHERS 1967-1968

The High School Geography Project is deeply indebted to the following trial teachers and their students who so willingly participated in this year's school trials.

Vincent Antonelli, West Deer Senior High School, Cheswick, Pennsylvania
Sidney Blackstone, East Atlanta High School, Atlanta, Georgia
Sister M. Beatus Carne, I.H.M., St. Martin High School, Detroit, Michigan
Robert Cason, Briarwood High School, East Point, Georgia
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Joyce Howard, Pleasant Hill High School, Pleasant Hill, California
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Vincent Monterosso, Jamesville-DeWitt School System, DeWitt, New York
James Norris, North Bergen High School, North Bergen, New Jersey
Paul Oswald, John Marshall High School, Cleveland, Ohio
Robert Pratt, Bowdish Junior High School, Spokane, Washington
Thomas Rondeau, Wauwatosa East High School, Wauwatosa, Wisconsin
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John Serff, Henderson Senior High School, West Chester, Pennsylvania
David Ross Thomas, Bassett High School, Bassett, Virginia
Sheila Whitesides, Porter Junior High School, Austin, Texas
Jo Ann Wickman, Easthampton High School, Easthampton, Massachusetts
Gary Wiseman, Champaign Senior High School, Champaign, Illinois
James Womack, Taft Junior High School, San Diego, California

SUMMARY OF MAJOR FINDINGS

1. The sample of teachers is probably above average in experience and geographic knowledge. The students are estimated to be at about the 65th percentile in verbal aptitude and somewhat older than most high school geography students.
2. The unit continues to rate well in terms of student interest, but less well than in its two previous versions. In terms of test performance students did considerably better than in previous years on the pretest but showed only a modest gain on the posttest.
3. From the point of view of teachers and students Portsville is by far the strongest activity in the unit. It is better received than in previous years.
4. Site Selection is rated far below Portsville, but considerably above the other activities. However, it is viewed less positively than in previous years.
5. Among the five integral activities Time-Distance is rated third by teachers, but lower by students.
6. A Few American Cities is rated near the bottom by teachers and students. However, teachers were quite enthused about the second part of the activity.
7. Models of City Form receives a considerably lower rating from teachers than any other activity, but students rate it third in interest and second in learning.
8. Of the two optional activities teachers express considerable enthusiasm for emphasis on the local community and considerable lack of enthusiasm for Bruges. Student estimates of Bruges are negative also.
9. Test results suggest that certain major concepts were already well understood before the unit began.
10. Teachers cite student achievement of openended skill and attitude objectives as often as they do conceptual objectives.

11. Instead of the estimated 16 class periods for the integral activities, 20 class periods are needed.

12. The student readings are more suitable for average readers than in previous years. However, additional work is needed to make them appropriate for below average readers.

13. Teachers are more confident about the subject matter of the unit than about the teaching procedures to be used.

14. The Teacher's Guide can be made more serviceable for teachers by precise checklists of materials and procedures to follow, by highlighting discussion questions, and by providing transparency masters of important maps and sketches.

15. The behavioral objectives and the unit test appear to be better received by teachers than in previous years.

16. The format of the materials is quite favorably received by most of the teachers.

17. A number of revisions are suggested for each integral activity.

DESCRIPTION OF THE LIMITED SCHOOL TRIALS

The 1967-1968 limited school trials have as their purpose the feedback of information useful in modifying the units being tried out. There have been HSGP limited school trials during the past two school years. In both of these previous trials earlier versions of the present Growth of Cities Unit were tried out. The present unit is similar to these earlier units in many ways, but includes some important changes also.

The Unit Materials

As in previous years, the unit materials consist of a Teacher's Guide and Student Materials. In addition, the unit includes four Portsville boards and lego blocks, as well as a number of exercises and quizzes for student use. The unit has five integral activities and two optional ones. Activity Two, A Few American Cities, Activity Four, Bruges: The Fortunes of a Medieval City, and Activity Seven, Models of City Form are new. Revised activities are Activity One, Site Selection, Activity Three, Local Community Site Considerations, Activity Five, The Story of Portsville and Activity Six, Time-Distance. The predicted teaching time for the integral activities is 16 days, with four days additional for the optional activities.

The Teachers

Twenty-seven teachers were selected for the 1967-1968 trials. They are located in 18 different states throughout the country, 24 of them in public schools and three in parochial schools. There is reason to believe that they are considerably above average in teaching experience and in their understanding of geography. The average teaching experience of the group is about eight years, with 40 per cent having taught three years or less and 40 per cent ten years or more. They have had on an average 27 hours of geography in their college background, which is nearly twice the average for last year's trial teachers. Their scores on the Graduate Record Geography Examination place them between the 35th and 40th percentile as a group, which is quite comparable to the mean score for last year's teachers. Incidentally, 11 of the 27 teachers taught HSGP materials in earlier trials.

The Students

Each of these teachers had one to four classes of students. Approximately 1,250 students participated in all. They were approximately equally divided among 1) ninth graders, 2) tenth graders, and 3) eleventh and twelfth graders. Specifically, five per cent were below ninth grade, 29 per cent in ninth grade, 32 per cent in tenth grade, 22 per cent in eleventh grade and 12 per cent in twelfth grade. This is a smaller proportion of ninth graders and a considerably higher proportion of eleventh graders than in previous school trials. It is probably a more mature group of students than the students presently taking geography in American high schools.

In addition they had a higher verbal aptitude than expected for the ultimate users of the material. The mean for the whole group was just short of the 65th percentile. The ninth graders ranked at the 76th percentile, the tenth graders at the 66th percentile, and the eleventh and twelfth graders just above the 50th percentile.

The Evaluation Instruments

A number of instruments were used to obtain information on which to base this evaluation report. Estimates of verbal aptitude were obtained by administering the verbal section of the Cooperative School and College Ability Test (SCAT) Form 3B. Information about the teachers was obtained by a background information questionnaire and by the administration of the GRE Advanced Geography test. Teachers took just half of this examination and Educational Testing Service provided an estimate of their percentile rank from this incomplete data.

At the end of the unit the students and teachers filled out questionnaires. A 25 per cent spaced sample of student questionnaires was used to summarize the openended questions. Teachers also completed questionnaires at the end of each activity in the unit. Copies of these questionnaires are included at the end of this report.

A unit test was administered before the unit was taught and at its conclusion. The same test was used in both administrations. For the analysis of the last essay question on the test a 25 per cent spaced sample was taken from the pretest and the same students'

posttest papers were identified for analysis.

The Reference Group

A small reference group of students was obtained. These often were additional students of the same 27 teachers who taught the HSGP materials. This group of students numbered 354 at the time the SCAT verbal was given to them. Their mean percentile rank is estimated to be just above 60. This is slightly lower than that for the HSGP materials group. Their numbers decreased to less than 300 for the pretest and the posttest.

RATING THE UNIT AND ITS ACTIVITIES

Student Interest

In terms of student interest this unit is not as successful as expected. When asked about their interest in the unit, 79 per cent of the students this year responded positively, whereas 92 per cent responded positively last year and 85 per cent the year before. The approximately 80 per cent positive interest response is about equal to the percentage expressing positive interest in the Manufacturing and Political Processes Units last year and considerably above the ratings given other units.

When teachers were asked to estimate the interest level of this unit, their rating was second only to the rating given the 1965-66 version of the same unit. Because of the relatively small number of teachers involved and relatively large number of students, the student estimates are probably more reliable than the teacher estimates when comparisons are made from year to year.

Student Learning

A rating of the unit in terms of student learning leads to the same sort of conclusion. The pretest mean score of 54 per cent increased to 65 per cent on the posttest. This eleven per cent increase compares with increments of 16 per cent last year for the same unit and 18 per cent the previous year. Eleven per cent is among the poorest increments recorded thus far in HSGP limited school trials. The 54 per cent mean pretest score is also remarkable in being by far the highest pretest score ever recorded on an HSGP test. No other pretest score has been above 43 per cent. Thus we can say that much of what was measured by the test had already been achieved before the unit was taught. Some of this is accounted for by the above average student verbal aptitude. It may also be due in part to the serious attempt to eliminate vocabulary problems and to include items measuring understanding of general concepts rather than knowledge of specific information. Another thing different about this test is the inclusion of questions with multiple answers that tend to have much higher percentages of right answers.

Test results, of course, are not the only indications of student

learning. Both teachers and students were asked to rate the unit in terms of its contribution to student learning. Students responded positively 78 per cent of the time, which is just about the degree of positive response they showed in their interest rating. Teacher judgment of student learning placed this unit second only to the rating given the 1965-1966 version of the same unit.

Overall Effectiveness

This year teachers and students were asked to rate the unit in terms of its overall effectiveness. When teachers were asked how effective this unit is compared to other units they have taught, 16 teachers indicated that they considered it to be more effective. The remaining 11 were non-committal. Of the 11 teachers who had taught the HSGP materials last year, seven said this unit was better than the one last year, one said not as good, and three were non-committal. In asking students how this unit compares with others they have studied three per cent said it was much poorer than other units, 16 per cent said it was somewhat poorer, 43 per cent said it was somewhat better and 38 per cent said it was much better. This 81 per cent positive response on the part of students lends credibility to the 79 per cent positive response obtained when students were asked about their degree of interest in the unit as a whole.

In spite of this generally favorable response the unit should have a positive student interest and effectiveness rating that is closer to 90 per cent than 80 per cent. To accomplish this goal suggestions for revision are indicated in the sections that follow.

The Effectiveness of the Individual Activities

The following chart compares all of the activities taught by at least fifteen teachers. The figures represent teacher and student opinions on a four point scale. They are calculated by assigning a +2 to the most positive opinion, a +1 to a somewhat positive opinion, a -1 to a somewhat negative opinion and a -2 to the most negative opinion possible. These ratings provide the basis for the discussion that follows.

Activity	Portsville	Site Selection	Time-Distance	American Cities	Bruges	Models of City Form
Teacher Enjoyment	1.92	1.66	1.30	1.04	.85	.50
Teacher Estimate of Student Interest	1.74	1.26	1.21	.88	.40	.42
Student Interest	1.22	.56	.07	.31	-.04	.36
Teacher Estimate of Student Learning	1.59	1.15	1.13	1.00	.86	.58
Student Estimate of Learning	1.28	.42	.33	.09	.02	.44

As the chart indicates, both teachers and students agree that Portsville is by far the strongest activity in the unit. Moreover, a comparison of these teacher ratings with comparable ratings from last year and the year before suggest that this activity has been improved over previous years. This suggests that the changes made this year in the student readings and in the provision of four Portsville boards for each class have been successful in improving the reception given the activity.

The chart above indicates that the Site Selection Activity rated far below Portsville on every count, yet quite significantly above any of the other activities. Interestingly enough, however, this year's teachers rated the Site Selection Activity considerably lower than did the teachers last year and the year before. It alone of the three activities that have been in the unit since the beginning has declined considerably in the estimation of the teachers teaching it.

After this agreement by teachers and students about Portsville and Site Selection, they tend to disagree about most of the other activities. The student interest rating for the Time-Distance Activity was barely positive, the lowest given to any of the five integral activities. It was also rated next to last with respect to what they felt they learned from it. Teachers, however, were somewhat more positive. They mistakenly thought that the activity was of considerable interest to students. In previous tryouts of this unit, the Time-Distance Activity received a teacher rating comparable to the one received this year.

Of the five integral activities the teachers rated Activity Two on American Cities next to the bottom. It is worth noting that teachers tended to rate the second part of this activity far higher than the first part. In fact, the second part rated as highly as Site Selection with the teachers.

Most striking of the differences in teacher and student perception is in their rating of the Models of City Form Activity. Teachers consistently rated this activity lowest of all those in the unit, but students did not. In spite of the relatively positive student response, the degree of teacher dissatisfaction and lack of confidence with respect to the Models of City Form suggests that it needs a significant amount of revision.

The Bruges Activity was rated next to the bottom by teachers in their estimate of student interest and learning. Students working with this activity gave it the only negative rating of any of the activities with respect to interest and a barely positive rating with respect to what they thought they learned from it. At the end of the unit teachers were asked which of the activities they thought were essential, which could be optional, and which could be deleted. Only three considered Bruges essential. Fourteen said it could be optional and eight said that it could be dropped. No other activity in the unit received more than one teacher's vote for deletion.

The local community activity is not included in the above chart because only ten teachers attempted to teach it. The enthusiasm of these ten was quite high. In their enjoyment of it and in their estimation of student interest they placed it second only to Portsville. However, this interest estimate did not hold up so well with students. Although the students who said they remembered this activity were positive about it, they were quite significantly less positive than they were about the Site Selection Activity or Portsville.

OBJECTIVES AND THEIR ATTAINMENT

Test Data

One of the major conceptual objectives of the unit is increased understanding of the factors that influence the location and growth of urban settlements. Six questions *(#10, 14, 15, 16, 27, and 31) dealt directly with such influences, but particularly with transportation. The percentage of students getting these questions right on the pretest was 63 per cent. This increased to 74 per cent on the posttest. Another influence is the existence of some enterprise that brings in income from outside the urban area. The average per cent right on these two questions increased from 62 to 73. Thus the multiple choice questions used to measure student attainment of this objective indicate that students already had a relatively high degree of understanding before the unit began. Perhaps the extended emphasis on it in the Site Selection, American Cities and Portsville Activities is not warranted.

An attempt is made to get at this same concept through an essay question also. Students are supposed to list the questions they would ask to obtain information to predict which of three African coastal settlements will become the largest by 1980. Pretest and posttest responses were classified in terms of the topics to which the questions were related. There was relatively little change in the number of questions proposed with respect to such topics as climate, natural resources, transportation, the education of the people, and opportunities for manufacturing. In fact the number of questions related to the latter topic decreased from 127 in the pretest to 107 in the posttest. Site characteristics was the one area where there was significant increase in questions from pretest to posttest. This topic included such things as the quality of the harbor, the characteristics of the terrain, the availability of fresh water and the conduciveness of the area to health. Such questions increased 53 per cent from 176 in the pretest to 269 in the posttest. Thus the unit

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*The average pretest to posttest gain for the control group was two to three percent. Consequently, only pretest to posttest increases of over five per cent are interpreted as evidence that performance on a test item has improved, probably as a result of learning from the unit.

seems to have sensitized students to the importance of site characteristics in the growth potential of urban settlements.

A second major concept included in the unit's objectives is that the variables involved in the location and growth of urban settlements change over time. Five objective questions (#12, 17C, 19B, 19C and 19D) showed gains on this point from a pretest mean per cent right of 76 to a posttest score of 86 per cent. These results indicate that the students are already aware of the importance of time in changing the influences on urban location and growth. It may be desirable to reexamine the weight given this objective in Site Selection, American Cities and Portsville.

Another conceptual objective of the unit is to increase the student awareness that decisions must often be made with insufficient information. Two questions (#17B and 18E) relevant to this objective showed a pretest per cent right of 64 with a posttest gain to 82 per cent. Again, this result indicates that a considerable proportion of students were already aware of this point before the unit began. Nevertheless, 18 per cent more students responded correctly after exposure to the unit. The same three activities, Site Selection, American Cities and Portsville probably are responsible.

A fourth major conceptual objective is increased understanding of the factors that influence urban land uses. Eight objective questions (#1, 2, 4, 11, 20H, 29, 30, and 32) showed mixed results with respect to this point, with a pretest mean of 53 per cent and a posttest mean of 64 per cent. Most of the learning related to these items probably occurred in the Portsville Activity. Another question (#3) is particularly interesting in suggesting that the unit oversimplified the relation of industrial land use to forms of water access. During the pretest 34 per cent of the students incorrectly identified a point on a lake as probably an industrial land use. In the posttest this percentage increased to 55 per cent. The percentage of students believing that there was insufficient information declined from 41 per cent in the pretest to 26 per cent in the posttest.

A fifth objective is increased understanding of how a number of variables like population and income are likely to be distributed in

an urban area. Five related questions (#8, 21, 22, 25 and 28) had a mean pretest score of 43 per cent that increased to 59 per cent. These questions reflect improved performance that is probably related to the Portsville and Models Activities.

An objective directly related to the Time-Distance Activity seeks to have students improve their ability to determine the most accessible point in terms of time, distance and population. The three questions involved (#5, 6, and 7) had a mean pretest per cent right of 33 that increased to 46 per cent in the posttest. This above average increase could be expected with an objective that is so specific to something in the unit materials.

Another objective related to a single activity seeks to improve student ability to use models in explaining and predicting urban land use patterns. There were no questions directly related to this objective in the test. However, two questions (#23 and 24) were included to determine whether students understood some of the implications of the concentric ring and sector models discussed in the Models of City Form Activity. The pretest per cent right on these questions of 59 per cent increased to 62 per cent on the post-test, an insignificant gain.

Teacher Statements of Learnings

At the end of the unit when teachers were asked to indicate the most worthwhile thing their students had learned, 12 of the 27 teachers cited such conceptual attainments as we have referred to so far. Fifteen of the teachers, however, mentioned skill and attitudinal factors in addition to these conceptual ones. The following are examples of statements of this kind of outcome:

"It seems to me that their organizational and logical skill has improved. They see many more relationships than they saw previously."

"They have learned to look at their own city with a new awareness."

"The kind of reasoning which emphasizes the tentativeness of findings, the need for more information."

"They learned to apply their past and present knowledge to the solution of problems. When the students began to express ideas and make decisions they were forced to defend the stands they took. Many of the students cameaway with a better attitude toward social studies and geography."

"They learned to discover for themselves the answers to problems and that given the same information, another person could quite logically develop a rival hypothesis."

"The emergence of the reasoning ability on the part of most students was most gratifying for the students themselves. Even low ability students, usually discouraged by being told they are wrong, made great strides knowing that their answers were usually never completely wrong."

"They learned that they could learn from each other. They learned that they had important things to contribute to class and for the first time people would listen to them. They learned that learning can be fun. It was extremely satisfying to me to see students come up with new concepts or modifications and say, 'Well, if such and such is true, based upon what we discussed yesterday, then this must follow.'"

The above teacher statements of student learnings suggest that the materials may have achieved some of their more openended objectives, as well as some of their more explicit conceptual ones.

THE UNIT MATERIALS

Time Requirements for the Unit

Teachers and students expressed considerable concern about having to rush through parts of the unit faster than they felt desirable. If fifty minute class periods are assumed, the following amounts of time should be allowed for each activity. It should be kept in mind that these estimates are means and not maximums or minimums. Approximately half of the teachers would need more time and approximately half would use somewhat less time. The left hand columnindicates the amount of time suggested in this year's Teacher's Guide. The column on the right is the time that is recommended if the activity retains its present form.

	Present		Proposed
Activity One	1	class periods	1 and 1/2
Activity Two	2	class periods	3
Activity Three	3	class periods	3
(But any serious effort with the local community is liable to take more than three class periods.)			
Activity Four	1	class periods	1 and 1/2
Activity Five	7	class periods	9
Activity Six	2	class periods	2
(This is a one and one-half activity without the reading and a two and one-half activity with the reading.)			
Activity Seven	4	class periods	4

Thus it is proposed that the total number of class periods for the five integral activities be 19 and 1/2. If the two optional activities are added, this becomes a 24 class period unit. Of course more than this number of actual teaching days would be needed for such demands on class time as school assemblies and teacher quizzes.

The Student Readings

A remarkable 96 per cent of the teachers reported that the readings were clear for average students. This figure was 89 per cent last year and 67 per cent the year before. However, the needs of

the below average student have apparently not been met as well by the readings this year. Only 35 per cent of the teachers thought the readings were clear for such students. Last year, on the other hand, there was a 44 per cent positive response to this question. Student attitude with respect to readings was 60 per cent positive this year, slightly less positive than the student rating last year and the year before.

As a result of these ratings and additional teacher and student comments about the readings, it is clear that they should be reviewed to simplify the vocabulary whenever possible. When there are a variety of readings, those appropriate for slow readers and those for more advanced readers should be identified early in the guidelines to help teachers in their eventual assignment. There is clearly a need for additional supplementary readings, especially for better students. These might well be readings which could be managed without the utilization of class time. When this is the case, some way should be provided by which the teacher can ascertain that the students have done the reading.

Student materials include more than just reading. Whenever possible, pictures and sketches such as those in the Portsville student materials should be included. Most comments about maps suggest the desirability of putting more information on them. Also, whenever possible, the student materials should be bound. The amount of loose material to be handed out in this unit should be decreased wherever possible.

The Teacher's Guide

The Teacher's Guide serves three major functions: the presentation of objectives, the description of procedures to use in teaching, and the provision of background information so the teacher can intelligently discuss the issues and answer the questions raised in class about the subject matter. The behavioral presentation of objectives in this year's guide has been received quite favorably by the teachers. When teachers were asked about their confidence with respect to the subject matter and the teaching procedures required in the activities, they uniformly expressed more confidence in their grasp of the subject matter than in their ability to handle the teaching procedures.

The implication of this may be that there is less need to increase subject matter information provided teachers and more need to provide help with teaching procedures. Another possibility could be that the unit requires certain inquiry procedures that are sufficiently unfamiliar that teachers are not sure of themselves.

The Teacher's Guide can be made more serviceable for teachers in several ways. In the first place teachers feel a need for check lists by which they can determine quickly what they need and the anticipated order of teaching each part. The Teacher's Guidelines also can be made more useful to teachers by a highlighting of questions so that these can be easily seen while the teacher is leading a class discussion. Finally, provision should be made for full page transparency masters to use in projecting maps, graphs, and possibly key discussion questions.

Teacher comments about the ideas in the unit and how they are related to one another suggest consideration of the following points. There may be too much repetition of certain concepts; for example, too much emphasis on site throughout the early part of the unit. Some of the concepts may also be too elementary for older and more capable students. Test results tend to support this point. The high proportion of students correctly answering questions on the time dimension in the pretest suggest that this idea may be too elementary for high school students. This might also be the case about the transportation factor in site selection and urban growth. Finally the relation of activities five, six, and seven to one another should be reconsidered. One aspect of this is their apparent lack of continuity. Another is the proposal that Portsville might best be considered as a summary activity at the conclusion of the unit.

The Unit Tests

Although a few teachers suggested that objective test items do not seem to be appropriate for HSGP materials, other teachers went out of their way to say that they thought the test was excellent.

Item analysis data suggests that three questions may be ambiguous. These are questions 3, 4, and 13, all of which have an r_{bis} of less than .30. Teachers suggest that items 3 and

23 may lack clarity. Teachers apparently approve of questions like essay question 36. The complexity involved in multiple correct answers, both from the point of view of students and the scoring involved suggests that these should be eliminated.

Both students and teachers need feedback on student performance often and quickly. Students should get an impression of how well they are learning what is intended. Teachers also need such information for grading purposes. This need has not yet been met. The self check quizzes were not very well received. It may well be that the illustrations of the behavioral objectives accompanying each activity provide the basis for periodic quizzes that may be helpful to both teachers and students.

The Format of the Materials

The format of the materials was quite favorably received by most of the teachers. Most who commented about the size of print were favorable; only two wanted it larger. One teacher, however, said that if the print were larger students might consider it to be childish. The four teachers who commented about the page size were favorable. Five teachers commented about the cover, three positively and two suggesting it should be heavier. Three commented favorably about the durability of the materials and one unfavorably. Two commented favorably about the side note margins and one unfavorably. Two teachers would like more color used. Two teachers would like the Teacher's Guide to be in a loose leaf folder. Overall, however, the materials are considered to be more attractive than any previous HSGP materials. No clear recommendations for change emerge from teacher comments.

SPECIFIC RECOMMENDATIONS FOR EACH ACTIVITY

Site Selection

1. Make it possible for teachers to project the diagrams with an overhead projector, possibly by providing full page diagrams in the Teacher's Guide.
2. There is no need to put in space for a 1968 diagram. It is too small. The problem can better be assigned to students who provide their own 8 and 1/2" x 11" paper.
3. Clarify the directions for the 1968 diagram of a subdivision.
4. If possible, make the scale smaller. Two miles to the inch makes some things closer together than seems reasonable.
5. More information seems needed on the 1890 map; for example, the identification of roads.
6. Make the reading more suitable for below average students by simplifying such words as famine, dominant, economically, urban complex, crucial, adjacent, and inoffensive. What a subdivision is like should not be taken for granted.
7. Allow one and one-half to two class periods rather than one.
8. An alternative approach suggesting the formation of small groups for discussion should be proposed.

A Few American Cities

1. If a choice between the first and second parts of this activity is necessary, the second part is preferrable to the first. Thirteen teachers filled out separate questionnaires for each part. Part I received ratings of .38 and .54 for interest and contribution to learning respectively. Part II received a 1.23 rating on both counts.
2. The Tale of Three Cities reading should be shortened or presented in parts. Consideration should be given to reorganizing it so that all the information about one city is provided before information on another city is presented. Substitutes should be sought for such

words as subsequent, penetrate, strategic, excessive, influential, tenant, hinterland, hankering, stipulations, business acumen, and bottomlands.

3. Students should be provided with more information about the region east of the Appalachians in order to make more intelligent location decisions. This might be done by adding relief features and other factors to the maps. State names would also be helpful. Consideration should be given to providing teachers with additional information that would help them answer student questions about why some cities grew (Indianapolis) and others did not (Cairo, Illinois).
4. Pictures and/or sketches would increase interest in both of the readings.
5. The questions asked students in their readings and suggested for teachers to use in discussion should be reexamined. Question two on page 18 of the Teacher's Guide is a positive example of a thought provoking question. Question two on page 19 is a negative example.
6. Three rather than two days should be allowed for the activity.
7. Consider the possibility of emphasizing student prediction of both location and subsequent growth of the three cities at different time periods. Periodic infusions of historical information would serve to verify or disverify predictions and also provide a foundation for the next prediction.

Local Community Site Considerations

1. Relating the local community to considerations of location, urban growth and land use is desirable. Many alternatives are possible, from relating the local community to each of several activities, to developing a self-sufficient local community activity. It should be made clear that where such an activity is located in the unit is up to the teacher.
2. Use of the Portsville board with a map of the local community should be suggested as a possibility with this activity.

Bruges: The Fortunes of a Medieval City

1. The reading should be recommended as optional or supplementary for better students, preferably for students with some background in medieval European history.
2. As a supplementary activity, the guidelines should suggest what students could be assigned to write or do. Unless most of the class were exceptional in ability and background, there should be little expectation that class time would be needed.

The Story of Portsville

1. Reading and pictures were well received and should be changed only modestly, if at all.
2. The self check quizzes should be reexamined in terms of their intended functions.
3. A more explicit outline of activity procedures and especially directions for the Portsville model should be included. Some Portsville model directions might be included in the student materials also.
4. Enough models should be provided for each class so that no more than five students work on each model.
5. The coloring on the Portsville map apparently causes some difficulties in perceptions of relief. More differentiated coloring of the high income and multiple unit residential land uses should be considered. Color coding the backs of the lego blocks by time period would facilitate use and reuse of the blocks.
6. The present packaging of the blocks should be reconsidered. More flexible railroad pieces would help. Some students even suggested blocks that are replicas of the land uses; for example, pieces with chimneys for factories.
7. The possibility of learning what happened to Portsville after 1900 should be included, at least as an optional feature.
8. The time needed for the activity is nine days, ten when Portsville is brought from 1900 to the present. Only seven days were mentioned in the Teacher's Guide.

Time-Distance

1. More attention should be given to the significance of what is to be learned and the function of the activity in the unit. Emphasis on the activity's relevance to local freeway systems and their consequence might be considered.
2. Examine the Teacher's Guide directions and procedures for possible lack of clarity, especially on the use of the computation tables.
3. Discussion related to the local situation, such as freeways and high schools, should be encouraged. However, the "perceived distance" question on page 52 of the Student Materials needs to be clarified. The term does not communicate to many students.
4. The route selection reading should be shortened if it continues to be included. Consideration should be given to suggesting it as a supplementary reading.

Models of City Form

1. The abstractions in the reading should be clarified as much as possible by additional diagrams, examples and sketches. Addition of some of the Teacher's Guide information to the student reading may be helpful in this regard. Illustrations from additional cities might be considered also.
2. Additional ways of involving students should be provided. The Portsville board may be useful in this regard.
3. Suggest using an overhead projector with the maps and sketches not in the reading to provide foci for discussion.
4. The relationship of Teacher's Guide to Student Materials should be examined. Teachers want to know more explicitly what they should do.
5. Consider the possibility of starting with the real world (Chicago, Pittsburg and so on) and building the model from such examples.
6. Provide teachers with additional background information on the characteristics and uses of models.

APPENDIX A - TABLE ONE

TEACHER FINAL QUESTIONNAIRE

Summary of Objective Questions

Questions 6, 14, 18, 20, 22, 23, 24, 25 and 26 are recorded under teacher comments.

% Yes		
96%	1.	Do you believe the reading materials are clearly written and understandable for the average student?
35%	2.	Do you believe the reading materials are clearly written and understandable for the below average student?
88%	3.	Do you believe the reading materials are well-organized from an instructors point of view?
46%	4.	Should there be more student reading in the unit?
19%	5.	Should there be less student reading in the unit?
48%	7.	Should the Teacher's Guidelines be made more effective in providing clear directions for the teacher?
12%	8.	Should the Teacher's Guidelines be made more effective in clarifying the objectives of the unit?
35%	9.	Should the Teacher's Guidelines be made more effective in suggesting a variety of learning activities?
37%	10.	Should the Teacher's Guidelines be made more effective in providing the geographical background you needed to teach the unit?
67%	11.	Should the Teacher's Guidelines be made more effective in suggesting supplementary reading materials for students?
12%	12.	Did you feel unnecessarily restricted or overly directed by the guidelines?
30%	13.	Do you feel the guidelines should provide more direction for the teacher?
4%	15.	Is the subject matter of the unit too difficult for students?
12%	16.	Is the subject matter of the unit too simple for students?
85%	17.	Is the subject matter well organized?
93%	21.	Did the unit test adequately measure the content of the unit as you taught it?

19. How worthwhile is each activity?

Name of Activity	# Responding Essential to the unit	# Responding Could be optional	# Responding Could be dropped
Site Selection Diagrams	26	1	0
American Cities	15	11	1
Local Community Site	10	11	1
Bruges, a Medieval City	3	14	8
Story of Portsville	27	0	0
Time-Distance	22	4	1
Models of City Form	20	5	1

APPENDIX A - TABLE TWO

TEACHER COMMENTS FROM THE FINAL UNIT QUESTIONNAIRE

6. Suggestions and/or comments about the reading materials.

Need more reading suggestions for above average students.

Some had difficulty with words - what is needed is a glossary.

There were some instances where the slow student had difficulty understanding the materials with regard to instructions.

In my situation I have students who generally detest reading, yet none of these complained of difficulties in either comprehension or excessive reading load.

Some of the slower students found the reading hard to stay with.

Vocabulary was too difficult for all but a few of my students.

Student reading is "ok" but should be done for homework. The time saved should be spent on more manipulative class projects.

I felt there could have been more reading assignments. However, my students and I felt those included were well written, even exciting.

The vocabulary level is way beyond the scope of below average students.

I have just a few pupils who are considerably above the rest of the class. Supplemental readings would have provided them with something to do while waiting for the rest of the class to catch up with them.

The readings should be relatively short or broken into short segments.

The readings must be more provocative. The student should be involved in a series of exercises with each segment. I would like some thought or mental puzzle to accompany each reading.

14. Suggestions and/or comments about the Teacher's Guidelines.

Advanced students should have more reading material and the teacher can provide them if he can identify them early enough. I would suggest that a paragraph be included in the first part of the material that identifies the material for slower or advanced students.

Teacher Comments From the Final Unit Questionnaire

14. Suggestions and/or comments about the Teacher's Guidelines (cont.)

Excellent objectives - might be emphasized a bit more.

More details for each day's needs.

It was often difficult to pick out a precise plan of action or strategy for each activity except the first three.

Directions do not seem precise enough, at least for the teacher with little experience in teaching geography. I would suggest that suggestions for teaching be printed in bold type or separately printed in bold type or outline for easier spotting.

More of the true discussion type questions would be helpful in some of the activities.

Too little outside resource work is a problem. I think several other outside sources should be listed for the activities where this is needed.

I'm not sure the questions or the organization of the materials always leads the student to the objectives. I would have liked tests that paralleled the objectives similar to those suggested in the Teacher's Guide.

I have mixed feelings about the Guidelines: sometimes I feel that I have to follow a script (question, answer, teaching strategies, etc.) and again in areas where I lack clarity (e.g. sector), I need as much help as I can get.

It was slightly restrictive.

All of the directions for a smoothly run activity should be together sort of as a check list. Could the discussion answers be outlined for easier reference?

I went by the book and was glad I had it. The second time through will require less attention to the Teacher's Guide. I felt secure with the guide up till the last sections.

Perhaps more comments as to further readings or resource materials.

Background and utility of information learned would be helpful, especially since students always ask, "Why do we have to learn that?!?"

Perhaps in some activities it would be a good idea to include a simple "order in which to do things" type of list.

I felt that the behavior objectives were clearly stated. The exercises did not relate sufficiently to the stated objectives.

Teacher Comments From the Final Unit Questionnaire

14. Suggestions and/or comments about the Teacher's Guidelines (cont.)

More of the type of pages (p. 21-22) should be included for teacher ease in overlay reproduction.

Discovery type situations or questions should be supplied for supplemental discussion.

More general background needed for teacher awareness of means of meeting objectives. The terms and ideas are relatively foreign to me. I felt a need for more information and preparation for the lesson.

I would urge only that the materials of the Student Manual be included in the Teacher's Guide.

With my weak-aging eyes I would prefer bold type to accent major points. I teach standing up, not seated at the desk and therefore would appreciate larger type for those things pertinent to the discussion.

In the future I will have more teams or small group discussion, such as in activities 1 and 2. I also will require written summaries of ideas they have learned from each activity (to hopefully get them away from facts).

18. Suggestions and/or comments about the subject matter.

Too much site concept. Too little in economic and political concepts.

The subject matter might be a little too simple.

Students felt there was too much repetition of concepts from activity to activity. I did not feel this since the concepts were modified and new ones introduced.

The organization could be better if Portsville came a little closer to the end of the unit. It was the high point of the unit and what followed was anti-climatic. City form becomes a reality by using it, not just looking at Chicago.

Possibly Activity 7 concerning model city form might be included prior to the building of Portsville and also I feel a local community activity is essential to the unit.

Am I the only one to suggest that the Portsville Activity might be better placed at the end of Unit III?

Between Activity 5 and 6 - too abrupt, it is lacking in continuity. It is the same with Activity 7, there should be some sort of a bridge - a reading or a story perhaps.

Teacher Comments From the Final Unit Questionnaire

18. Suggestions and/or comments about the subject matter (cont.)

I feel that the unit 2 that was taught last year had more in it and held student interest more than this revised edition. Activities such as (#6) the relationship of accessibility to commercial land values and (#9) on median family income helped to build and hold pupil interest.

Some of the material is too simple for the young high school students I worked with. In our area, at least, it was a bit repetitive of 6th and 7th grade curriculum.

The adaptability of both high and low groups to the unit was the most gratifying aspect I witnessed. Both groups were equally challenged and equally enthusiastic even though their in-depth understanding varied.

Overall the subject matter seemed challenging even though some of the students commented that common sense entered into so many of the matters. As a matter of fact, few of them seem to have thought about a lot of the concepts covered in the unit. The geometric models of city form were the most difficult.

I feel that more should be made of why the material was important to the student - why it was worth learning and how they will use it in everyday life. I got the question several times, "How can we use this?" or "We already knew that, why didn't they just come out and say it?"

It would be quite simple for above average seniors, but it is excellent for 10th and 11th graders.

The unit is a little too easy for 11th and 12th graders.

The concepts lacked a "gut level" meaning to many students. Many terms were not structured sufficiently such as convenience good and land value. Development needs to be made on basic reasons cities grow or fail to grow.

20. What do you think was the most worthwhile thing your students learned from the unit?

They learned to look at cities as more than just places with a lot of people concentrated in a small area. Most had never thought of cities as having any patterns with regard to land use and existence and growth.

The factor of access is the major consideration of land value and importance to the growth of an enterprise.

How cities developed and the association of areas of the city with their land use.

Teacher Comments From the Final Unit Questionnaire

20. What do you think was the most worthwhile thing your students learned from the unit? (cont.)

Land use associations vis-a-vis accessibility.

Factors of site selection. Influences on growth or decline of cities.

Factors involved with development and growth of cities, such as transportation, routes, terrain, and other factors.

That cities are growing, dynamic, vibrant, changing factors in the modern world, that they don't just expand, but follow patterns with quite remarkable consistency.

The concept of land use.

How and why city sites and growth over time are "geography".

That while factors vary, site location has some logic to it. That cities have patterns to them - again while factors vary - for logical reasons.

Changes result with the passage of time - to the site, to the city, and to the people.

The process of urban growth.

It seems to me that their organizational and logical skill has improved. They see many more relationships than they saw previously

I think that they learned to bring both logical thinking and the ability to arrive at generalizations together.

To manipulate data and facts and how to use this manipulation to get at ideas.

That they have learned to look at their own city with a new awareness, with an alerted curiosity.

The kind of reasoning which emphasizes the tentativeness of findings, the need for more information. The average high school student is too apt to leap to unsubstantiated generalizations.

People should try to anticipate changes and plan for future growth of their own city and surrounding area.

The students became aware of city growth problems. It gave them a new perspective on their own community. They became aware of economic activities and transportation networks in relationship with city growth. Also, they really started to "look" at their environment.

Teacher Comments From the Final Unit Questionnaire

20. What do you think was the most worthwhile thing your students learned from the unit? (cont.)

Perhaps city growth is not a cut and dried phenomenon, but a very complex one. Also, on a broader scale, that one must look at life - people, places, and things - from many angles and even then there are many or at least several possible judgments that could be made. One must be alert for new information that might change one's conclusions.

They learned to discover for themselves the answers to problems and that given the same information another person could quite logically develop a rival hypothesis. They learned that in many (most) instances there isn't one right or correct answer.

The awareness of the city as a place subject to and worthy of study.

Group work -- I saw great growth in this line. My students were very immature, but most have grown much in the project. Most gained a great appreciation of the planning and problems connected with the development of cities - most presumed things like this just happened!

They learned to apply their past and present knowledge to the solution of problems. When the students began to express ideas and make decisions they were forced to defend the stands they took. The students were able to use many facts from many subject areas in working out Portsville. Many of the students came away with a better attitude toward social studies and geography.

They appear to understand far more the reasons for the growth and decline of areas. Geography is far more "alive" to them after a unit such as this.

The emergence of the reasoning ability on the part of most students was most gratifying for the students themselves. Even the low ability students, usually discouraged by being told they are wrong, made great strides knowing that their answers were usually never completely wrong.

A difficult question - they learned so many worthwhile things. They learned that they knew a lot about geography, although they never thought of it as geography before. They learned that they could learn from each other, they learned (many of them) that they had important things to contribute to class and for the first time people (including the teacher) would listen to them. They learned that learning can be fun. It was extremely satisfying to me to see students come up with new concepts or modifications and say, "Well, if such and such is true, based upon what we discussed yesterday - then this must follow?"

Teacher Comments From the Final Unit Questionnaire

22. Please indicate how the test can be improved.

Very good test overall, good reading and good use of "knowledge" and "idea" application and transfer of learning.

I do not think any test is effective unless a student can also write an essay question or two applying the ideas that were to be taught.

I had some pretty good students who didn't do well on it. I don't know why.

Change number 3 and number 23.

I thought it was excellent.

From results of the test I'd have to say "No" to above - these students seem more factually-oriented than conceptually and this seems to be the biggest problem. However, I feel that we must do what we can to direct them to the use of facts, not facts for their own sake.

I would avoid multiple correct answers. Use the list of abilities to be learned in the educational objectives as a realistic guide to see if they were indeed learned.

If published for regular classes some provision should be made for student evaluation. It bothers the student not knowing where he stands. This will take a long time to overcome.

You might have more questions like the ones on the test at the end of reading of each activity. The test was much more geographically oriented than the unit.

The vocabulary level should be reduced. I would like more questions like #36.

When this program becomes a commercial being tests will have to be set up in a better manner for grading purposes. Questions need to be more objective.

I thought the test this year was very good. Most of the students had sufficient time to finish the test.

Test was excellent.

The emphasis in the unit was largely on discovery, decision making and discussion, and the test required an answer per question. The method of testing was largely inconsistent with the method of teaching.

Teacher Comments From the Final Unit Questionnaire

23. What are the impressions of you and your students about the format we have used with this unit? Your comments about the cover, the size of the pages, the layout on the pages, and the type of print used will be appreciated.

The format is satisfactory. Wide margin for notes, comments, etc. were particularly helpful in preparing each class. The materials are attractive and portable and appear to be durable and sturdy.

For the first time since I have been with the project I have heard no complaint on this matter.

Students on the whole liked the book very much. Those students of the previous year who saw the book this year were very happy at the great improvement. I personally like the cover very much and our art teachers were very complimentary in their comments. The empty space in the teacher's manual is too much. With hi-lighters, some empty spaces would be sufficient room for my comments. The type of print seemed very good to me and to the students. The copies of student resources held up under use very well.

The format, print and layouts were superior and traditionally oriented. I feel the print should be larger. The booklet is relatively fragile. It should have a bound cover of a nature which can take abuse. The maps were simple and clear. I would prefer more land form information. The direction north should be accompanied by east and west.

Make transparencies of sites, Portsville, Time-Distance, and the ring in Models of Cities.

No complaint about type of print.

The print was a little small, the layouts were fine although I would add a few more diagrams instead of verbal explanations in parts of the book.

I found the print very fine as well as the layout.

I can't think of how I would improve any of it. The book makes you want to read it. I didn't have trouble with getting the students to read for home study.

I felt, and most of the students agreed, that the format used was excellent. I enjoyed and used the space allowed for notes on each page of the teacher's guide. The maps, illustrations, and pictures were excellent.

Avoid discussion questions on maps which lie on overleaf pages, they should be on the same page or opposite one. Map on last page without any explanation refers to this comment.

Teacher Comments From the Final Unit Questionnaire

23. What are the impressions of you and your students about the format we have used with this unit? Your comments about the cover, the size of the pages, the layout on the pages, and the type of print used will be appreciated. (cont.)

Cover design is adequate. Heavier cover materials should be used if long-term use is desired.

Better use of color would help some diagrams, e.g., use of more contrasting colors for maps in models activity.

The resources seem to be easily handled and withstand five weeks of use easily. They are not lost and are returned when misplaced. The print is easily read. The work sheets should all be placed in a work book instead of distributed as one sheet at a time. The type of work book could be graded and of use to the unit.

The technical aspects are fine.

Mechanically the book is very readable indeed.

All favorable. Pupils especially commented with favor on the size of the book.

Students found the book difficult to transport - too large to fold and fit in their pockets (from the looks of it, some tried). Perhaps a smaller, more compact size. Type is very legible, as are diagrams, maps, and photos.

As for student work materials, I'd suggest instead of printed materials you provide a master copy for making ditto and transparency copies for the students.

Cover is excellent. As for size of pages, I questioned the use of pages with greater width than depth. A former class strongly objected to that type of format, but these students liked the wider pages very much. The layout and print are fine. I am wondering about the introduction of more color, as in the diagrams on pages 4, 5, 6, and 12. Would blue and green color add much to the cost? Do you plan to publish the final text in unit sections or all of it between two hard covers? I have used both and think I prefer all of it in one book. Often a student wishes to refer to a previously studied unit and it is in her locker. Woe!

The only complaints were about the lack of clarity of some of the maps.

They thought the self check quiz sheets and answers were wasteful.

No comments here. They were all O.K. - cover, size of pages, and layout on pages.

Teacher Comments From the Final Unit Questionnaire

23. What are the impressions of you and your students about the format we have used with this unit? Your comments about the cover, the size of the pages, the layout on the pages, and the type of print used will be appreciated. (cont.)

Much improved over last book, but Teacher's Guide still leaves much to be desired. Should be loose leaf with full page diagrams which could be copied for use as overhead examples of population pyramid, etc. Teacher could then insert his own notes where he wanted.

I would like more detail on the maps. Topographical features and relief would help.

Students feel that they had too many things "handed" out to them and that all this multitude of maps, diagrams, etc. were hard to keep up with. This is a good point and perhaps you can provide a packet or other container for future students to use in keeping up with the material.

We agree generally that the cover, size of pages, layout, and type of print used are all very attractive.

The format was quite acceptable and was readily received by both the students and myself. The booklets received the usual rough treatment by students and held up very well. A couple of students commented on how the material was holding up under rough treatment. In a soft-back cover the booklets could be dropped, bent, twisted, etc. and still be usable. Had a hardback been used in such a manner it is doubtful that it could be used over. The size of the pages seemed to be acceptable to the classes. They were glad the material was not on large pages or square one. I feel the layout was effective, especially when dealing with models of city form (p. 56-57). Had the print been larger the students would have looked on the material as being too childish for them. The size print was acceptable.

24. If you were to reteach the unit the way you want to what changes would you make a) in the activities you would teach, b) in the order of teaching the activities and c) in the amount of time you would spend on each activity? Please explain.

I would teach Portsville last. The site selection would require less attention. I would seek out materials on local site and resource considerations and relate them throughout the unit.

The first three activities would be taken together, the American Cities Activity would be much reduced in importance. I think that Time-Distance should come before Portsville. Then take Portsville as an example in the city model activity.

Teacher Comments From the Final Unit Questionnaire

24. If you were to reteach the unit the way you want to what changes would you make a) in the activities you would teach, b) in the order of teaching the activities and c) in the amount of time you would spend on each activity? Please explain. (cont.)

I would follow the same order, perhaps giving more structure to Portsville.

The order seemed fine to me with the possible exception of Time-Distance which could probably be introduced earlier although I'm not sure it should be changed.

I liked all the activities and would teach them but activities 2, 4, and 7 need VITALITY. I would spend less time on Activity 1 and more on Activity 2. Also I would spend more time on local community, using it after 2 and after 5.

I would like Portsville the last activity. Everything will come out in a study and building of Portsville. Students should use what they learn and by putting Portsville last they can do it.

I would teach all of the activities but would lay more stress on Local Community since this makes all the previous work much more meaningful. I will include local historical development after the Portsville activity.

I changed local community site until after Portsville. I feel it could have been taught either time.

The order suggested seems the most logical.

I would teach them in the order that they are in. The only possible change might be to move Time-Distance ahead of Portsville.

I would expand the Models of City Form and Time-Distance activities to give some coverage to problems of cities and the effects of such things as the building of freeways on the tax basis, education, etc. Some time-studies of local travel would be done. I would conclude the Models activity with a study of our local community.

I think it would be advisable to teach Time-Distance and Models of City Form before teaching the unit on Portsville. This would give the class a better frame of reference for building the city.

Local site study seems necessary for application to a familiar setting, but this should follow Portsville or even be the concluding activity of the unit.

I wonder if it couldn't be taught in stages, e.g., Teach Activity 1, then apply to home city; teach Activity 5, apply to home city again; and so on for Activities 6 and 7. Perhaps it could be a unifying element. I would rather do less activities and do more with them in area of application to real circumstances. Why couldn't Time-Distance follow Activity 1 and/or 2?

Teacher Comments From the Final Unit Questionnaire

24. If you were to reteach the unit the way you want to what changes would you make a) in the activities you would teach, b) in the order of teaching the activities and c) in the amount of time you would spend on each activity? Please explain. (cont.)

More time! We were always so rushed! No time for casual discussions and relating ideas to the environment of our locale. This, of course, is purely a personal bias as I am rather tangent-oriented as a teacher.

I would spend more time on all the activities and would develop both additional reading, research and written assignments.

Too often, due to the time limitation, only the mechanics of the activities could be thoroughly completed, thus resulting in hurried discussion.

I would have less mandatory materials and would allow more time for Portsville and the growth of American cities up to 1968. The time limitations were (at times) horrendous.

I could have used 7 or 8 additional periods.

In terms of time I would only provide a broad outline and leave the rest to individual teachers.

I feel a teacher should use his own discretion as to whether or not an activity should be extended a period or two, or cut short. This would depend on many things - class interest, type of class, if the subject is related to something, locality, etc.

I believe that almost without exception, additional time could be alloted to each activity. Generally more discussion took place than possibly was accounted for. As it was time became unavailable for the optional activities I agreed to work with (this was partly due to longer time spent on activities as well as assemblies, snow days, etc.).

With some activities eliminated more time could be spent on Activities 1, 3, 5, 6 and 7. The only one we did in the alloted time was Activity 6. Omitting Activity 2, the unit could be completed in about 25 days or 5 weeks. More time is needed for discussion.

25. What additional suggestions do you have for improving the effectiveness of the unit?

Find some way to make Time-Distance and Models of City Form relate more closely to previous work because of weak transition. Also devise some evaluative excercises to test the abilities you say should be developed.

Teacher Comments From the Final Unit Questionnaire

25. What additional suggestions do you have for improving the effectiveness of the unit? (cont.)

As I told my students, I will not say things just to "make you feel good." The unit is superb. It has been one of the finest experiences I've had teaching. I learned a lot myself and so enjoyed the exciting discoveries that dawned upon my classes. Several who had been "sleepers" at the beginning of the year really came alive.

More provisions should be made for homework assignments and quizzes. I feel strongly that suggestions from other teachers on how they made the activities more interesting would be a valuable addition to the quidelines.

Portsville as the terminating activity to hold the interest to the end of the unit.

Return of "popcorn-line" activity; more about basic and service workers contributing to the growth of a town, but not by math computations. Perhaps by pictures and captions would be a better method.

Much of the material seemed of little significance to students - a kind of "yes, but so what?". Perhaps the addition of more readings which personally involve students (lawyer in Activity 2) or readings involving young people. It needs to be more directly related to their concerns.

More concrete suggestions on how teachers could obtain and use materials involving their own state or city would be helpful.

Relate more to students. They liked the activities but didn't see how they would ever use them. Maybe a realistic problem to solve at the end of the unit that would require the use of all the parts they have learned.

For the teacher - an outline to preface each activity.

More teacher orientation.

If each activity had an opportunity for the teacher and class to study local situations this would help. As each activity is taught the concepts could be reinforced by illustrating them with the local considerations.

More materials for use by the students would be helpful.

The site diagrams, etc. helped a great deal and more could be effectively utilized. Teachers could have the class make their own and use them. This would reinforce each of the concepts being taught.

Teacher Comments From the Final Unit Questionnaire

25. What additional suggestions do you have for improving the effectiveness of the unit? (cont.)

For teacher's purposes more opportunities for evaluation of student's progress is a necessary evil.

Also more emphasis should be placed, as mentioned above, on study of local community, even to the point of field work.

Allow more time for each activity.

26. Compared to other units you have taught, how effective is this unit in its present form?

The best overall.

This is probably the most effective of all the units I have worked with to date.

I felt it was greatly improved - even though my students did not do an exceptional job on their examination. I feel that they learned very much.

I would say that if I had completed this unit it would have been ranked in my opinion as one of the best I have used. I do not feel I was able to give this unit the time it deserved because of the shortage of class room days during the running of this unit.

I think it is very well done. Was it effective? Here is my answer: Yesterday a group of students were standing before a U.S. map and one asked in amazement "Why on earth did a city grow there?" Isn't that what we wanted?

I thought it was good, but students weren't as enthusiastic (except for Portsville) as I had hoped.

Very effective but would like more manipulation devices, games, etc. as opposed to reading materials.

It is quite effective, although far too hectic and too limited timewise to really "make a dent" in student discussion.

After being critical of the unit I don't want to overlook the positive aspects of it. This has been the most rewarding teaching experience of my life. This is the type of teaching I should always be doing but don't have the time. Even with the problems it is the most effective unit I have ever taught.

Much better.

Teacher Comments From the Final Unit Questionnaire

26. Compared to other units you have taught, how effective is this unit in its present form? (cont.)

It is different from any unit I have ever taught and so I can't easily compare it. I was surprised at how quickly the class caught on to what was expected in each activity.

The unit is somewhat like many others I have worked with. It tends to build on readings and textual concepts. The exercises are generally fairly provocative. Portsville was good due to the involvement of the student. Other areas did not commit the student sufficiently.

This unit in its present form was very effective and a pleasure to teach. I am actually anxious to do it again - better.

Comparing this unit with our regular geography course of study, the Growth of Cities was much more interesting to teach because of the favorable reaction of the students.

As my experience grows, the units seem to become better.

It is very effective but pupil interest was higher last year.

In spite of my many criticisms, this unit in its present form is much more effective than its form last year. And compared to typical units I have used of my own, this one stands out as far superior to anything I have ever done in geography. AMEN!

The unit was very effective as compared to what I taught last year. The effectiveness could be increased by having the Time-Distance and Models of City Form taught before the Portsville unit.

Compared to last year's unit on cities this unit is much improved - especially in the building of Portsville.

APPENDIX B - TABLE ONE

Summary of Objective Information

From Teacher Activity Evaluation Forms

Activity Number	1	2	3	4	5	6	7
Number of Teachers	27	26	10	15	27	26	25
Mean Time Requirements							
Minutes Taken	56	116	116	52	382	82	137
Minutes Needed	17	31	49	17	70	15	64
Problems Checked by Teachers							
Teaching Procedures	2	6	4	-	4	4	9
Student Directions	6	6	-	-	6	-	6
Background Information	4	4	-	-	4	1	6
Reading Level	3	6	-	3	1	1	3
Map's Effectiveness	4	19	-	-	6	5	4
Mean of Ratings by Responding Teachers*							
Teacher Attitude	1.66	1.04	1.80	.85	1.92	1.30	.50
Student Interest	1.26	.88	1.40	.40	1.74	1.21	.42
Learning	1.15	1.00	1.00	.86	1.59	1.13	.58
Clarity of Objectives	1.77	1.35	1.66	1.66	1.70	1.52	.58
Subject Matter Confidence	1.55	1.13	1.60	1.46	1.48	1.48	.45
Procedures Confidence	1.33	.92	.70	1.14	1.40	1.28	-.04

*The system used to attain the above mean ratings is explained on page 70.

APPENDIX B - TABLE TWO

Teacher Comments on Activity One - Site Selection Diagrams

Site selection has reading materials which a below average student can master. Activity 1 should be clearer on page 5, diagrams for 1968 and 1998 particularly. It was a big and sudden jump from 1910 to 1968. The idea of a subdivision should have been better developed, both for teachers with little background and for students.

At least two days for Site Selection. They were very enthusiastic about this activity. There was much stimulating discussion - no place to hurry.

Specifically I would suggest that 1) the site selection diagrams for 1968 should culminate the site selection series, 2) include examples of a planned modern city such as Columbia, Maryland in order to highlight modern site selection criteria.

Make a set of transparencies in black and white of the map site selection diagrams to be used in class discussion with an overhead projector.

Vocabulary is for the top half of students. Words such as famine, dominant, economically, urban complex, crucial, adjacent, inoffensive, and so on need to be simplified.

Suggest including transparency of student exercise sheet to use as students discuss each site for each time period.

Started the discussion in each class, but then had a student volunteer lead the discussion of diagrams for a portion of the class while I asked questions from the background.

They didn't use the space of 1968, as it was too small. They made sketches of various sizes as homework.

Made a transparency of the sheet in order to have a visual focus for the discussion.

In using the diagram for 1968, after all students had finished I had four or five of them volunteer to put their diagrams on the board and each of these explained his or her diagram giving the reasons.

Spent about twenty minutes in class discussion of the diagrams for 1800 and 1830. Then assigned the diagrams for 1860, 1890 and 1910 as homework. As a part of this homework each student had to justify his selection of the site with one or more reasons as well as his reasons for not selecting the other three sites. They wrote these on the back of the page of diagrams.

It was great. They were most enthusiastic. The 1830 discussion was very heated; also 1910. Lots of good give and take-wonderful.

Teacher comments on Activity One (cont.)

The students responded well - many for the first time. I had a little problem with all wanting to speak at once.

Many of those who are usually reticent in class discussion came out with very good ideas and enjoyed it.

I was amazed at the response.

There was meaningful class participation by a few students who had been tuned off all semester.

I took more than the suggested time because there was, for my kind of people, considerable interest to discuss what they had on their papers. This is most uncommon.

Some of the smarter students did not become too involved in the discussion, but many of the slower ones did.

I felt the activity a bit elementary for better students.

My class of terminal students showed little interest.

I am afraid that basically I am a lecturer and discussion type of teacher. I sometimes get the feeling that I am wasting time or belaboring the obvious.

They seemed pleased that there were no wrong answers. They gave good reasons for their choices.

They seemed to get much from this discussion, not just geographic understanding but a deeper appreciation of how much they can learn from each other.

Some became aware of the value of shared talents and of their own ability to give something personal to a group.

I constantly felt the pressure of time and had to cut off student talk to move on to the next item.

The time it took to cover the materials is due to great amounts of animated discussion of 1960 and 1990 selections. The historical ones were not as enthusiastically discussed.

The 1960 site diagrams seemed to confuse many of the students who seemed uncertain of what was expected of them.

The transition from the 1910 site to the 1960 site is too abrupt. Would you consider the sixth section being 1960 with an airport?

Teacher comments Activity One (cont.)

Pupils did not know whether you wanted them to draw an area with four potential sites as in the preceeding site diagram or draw one potentially desirable site for a 1968 developer. The Teacher's Guide seemed to be rather vague on this question. Since the reading in the student resources for this activity is written in the third person most students are left high and dry as to what their assignment really is. I did what was suggested on page 5 of the Teacher's Guide with the diagram for 1968. After discussing this I assigned the illustrations, but most of the students felt very insecure about what was expected of them. If the assignment would have been spelled out more definitely for them this might have been avoided. I would suggest an additional paragraph in the student's text on page 2 making it clear that the student is the developer.

With regard to the 1968 diagram I believe the students should be given a set of guidelines to use in construction of their diagram. That is the students should include major transportation networks relative to a large city and a highway system in relationship to their hypothetical subdivision.

The 1968 site blank should either be on the reverse side of the exercise sheet on site or not be included at all. My students as they got near the 1968 map started working ahead while listening to other students discuss their reasons for their site selection.

Scale might be enlarged. The students felt that the one mile scale in the diagrams was too small for good discrimination. I tend to agree with them.

The small area and scale did bother some students. I suggested they do a scratch copy or regular 8½ by 11 paper first and then attempt to scale it down. A few students picked up the 1998 selection very eagerly and some even settled on the moon.

The 1890 map can use some more pertinent information on it.

Perhaps a change in scale might help since some sites are only a mile or so apart and some students look upon this as a tiny distance.

Shouldn't the improved highway or road on the 1890 map be marked as a road?

In the 1890 diagram the students were not clear about which lines were roads. In the 1910 diagram most did not make the connection between mountains and mining.

Teacher comments on Activity One (cont.)

The vocabulary of the student materials was crushing for some of my kids.

It was time consuming to dig the procedure out from other materials. A suggested improvement is to have things as they are but add a checklist or outline of procedure, materials needed and when used and so on.

Teacher Comments on Activity Two - A Few American Cities

Activity 2 needs more reading materials perhaps.

Activity 2 needs interesting and vital reading and more clear information showing the distinct growth or lack of growth for each of the three cities.

Students did have difficulty relating the map on page 12 of the Student text with maps that were passed out of the mid-west. I suggest that you draw in state lines on hand out maps.

I would want more and better information on the maps for Part 2 of Activity 2.

Eliminate Activity 2 unless it is revised.

Spark Activity 2 with vitality in student performance. Also, Part 2 of Activity 2 needs more and better maps, diagrams and routes.

This is great! I liked it very much. However, it is probably less stimulating than the first activity. The students were less involved.

For my money there is too much reading-discussion-map-discussion, followed by more of the same.

I'm having a great time teaching and the kids seem to be enjoying it. I was extremely pleased at the student responses, at how excited they were to learn how close they had come to predicting a city's success.

Enjoyed rt One; not so much Part Two --- sorry.

The materials in the second part went over very well in my classes.

Students responded well to comparing their sites to the ones that actually developed in 1840 and 1890.

They thoroughly enjoyed the challenge of picking the ones that they felt would become large settlements and comparing their choices with actual results. There was much discussion as to why sites they chose did not become major settlements.

First day's work did not involve them nearly to the degree that the second day's work did.

They began to see how other factors besides site can influence growth.

Teacher comments on Activity Two (cont.)

Greater interest in marking maps than discussing reasons for choices.

The difficulty is one of time. Students resent being hurried through materials. Especially when they are enjoying them.

I felt continually cramped for time to carry out sufficient discussion of the material. There is more to this activity than just hitting the high points listed in the guidelines. I do not like rigid regimentation.

Could we be more realistic and allow more time? Or if less information is deemed necessary, cut out some of the material. I personally would like to give more time and keep the material. It was of great interest to my class.

Something lacking in motivation in the reading. Too dry! Reading needs to be broken up. It took 20 to 25 minutes for my pupils. Difficult words: subsequent, penetrate, strategic, excessive, influential, tenant, hinterland, hankering, and stipulations.

Solid reading from pages 3-14 is not very salable to sophomores unless it is made understandable with illustrations, maps, and graphs. The vocabulary is geared to the good-average and superior student. It proved to be difficult for the low-average and left the below-average discouraged. No more than three or four students in each of my three classes knew the meaning of business acumen, hinterland, and bottomlands. Many, judging by its use in context thought hinterland meant the mother country.

You could hear a pin drop while the reading was going on. This is probably from interest, but they could be doing it because the program is new.

I visualize the Tale of Three Cities to be an opportunity for interesting group work. Each group could take one of the cities and graphically report on its growth or lack of growth in the four major development periods. When responsible for such information, students read lengthy material and enjoy it.

Questions 1-5 didn't seem different from any traditional comprehension questions you might find in any traditional test book.

Questions 5-6 on pages 10 and 11 were difficult for the students to answer. These questions went over like lead balloons.

A visual aid at this point might help to spark interest, a picture or two of handsome Thad, young lawyer, traveling about.

Teacher comments on Activity Two (cont.)

The written work lacks color, this could be enhanced with a few choice slides depicting the time period and site selection ideas.

The drainage map and the population maps were not sufficient for teaching the concepts intended. I myself wanted to know the relief features, the types and locations of roads, canals in the planning stages or completed, types of boats and steamers used, types of vehicles used, political divisions such as the Michigan territory, unorganized territory or Indian territory, in order to make a good judgment about the location of possible future cities.

I did feel a little uneasy when I could not explain fully why some cities appeared in what seemed from our information to be illogical spots.

Some reason for the statement about why no major city grew at the Mississippi and Ohio confluence would be helpful.

The questions on pages 17, 18 and 19 should be looked at. When I asked, "What advice would you have given this adventurer?" the students mentioned such things as waiting till the storm was over or until the thaw came. While they were looking at the drainage maps they forgot the type of advice he was asking. When I asked question 1 on page 18 their reasons for choosing these places - the students wanted to know which one. You can only defend all ten in very general ways. Question 2 was great but the students were a little critical of the map for not giving more information. This did cause them to think. The second question on page 19 didn't cause them to think, they answered yes, but I had to tell them why.

The large area and smallness of the map made the choices more random than I felt necessary. More information on drainage map needed. More discussion time was necessary. Even by doubling the time allotment, I had difficulty in completing major learnings. Reading length of the Thad story was excellent. The idea of comparing to real growth was excellent. The prediction comparisons gave occasion to discuss technology of that time. Student maps should have names as in teacher map.

We used an overhead transparency of the drainage map so that students could see what choices other students had made and were talking about.

I feel the handouts are too numerous and use of an overhead projector, or in this case, a tissue overlay would be more effective.

Too much talking on the part of the teacher.

Teacher comments on Activity Two (cont.)

There is far too much class discussion structured into the program at the present. I felt that as a total class we had too much discussion. So I broke them into smaller groups and made out discussion guides based upon questions in the Teacher's Guide. At the conclusion of the group discussion work on these questions, we tied up the activity with a general class summary of questions.

There is some difficulty in the transition from Activity One. However, the map work in this first part of Activity Two works better if the students have not read the reading. The reading could have more related activity other than discussion.

It would also be helpful if there were some suggestion on how to conclude the activity. It ends rather abruptly. Perhaps the suggestion that students offer two or three written generalizations about site location might fix the understanding a bit more firmly in the students' minds.

Teacher Comments on Activity Three - Local Community Site Considerations

Activity 3 had to be done too soon for me to have prepared it the way I wanted it. Our speaker was very disappointing as a speaker, but brought us much useful material.

Perhaps more time could be given to Local Site Considerations and it could be made essential to the unit.

I used Local Community Site Consideration as a culminative activity and would do so again. Inserting the local community map in the Portsville holder is an excellent idea and worked out very well.

Relocate Activity 3.

Local Community Site Considerations, if developed properly, could be most interesting with my below average pupils.

I began the activity with a series of short film strips on Detroit history. The film strips provided a basis for discussing some of the questions in the Teacher's Guide, i.e., what were the functions that the city performed at various times in its history? On the second day of the activity I invited in a speaker from the City Planning Department to talk to the class about trends in land use. On the third day the class worked in pairs on maps of present and predicted land uses.

I invited a fellow teacher who is well versed in local history to address the class. On the basis of the lecture and the resultant discussion, the students drew maps predicting the direction of growth in the community. They then discussed the reasons for their predictions.

The fact that there was so much which students could relate from their personal experience stimulated a most insightful discussion.

Teacher Comments on Activity Four - Bruges, a Medieval City

Bruges caused my slow learners considerable difficulty.

The reading in Bruges is very difficult.

In Activity 4 more vital work should be required of the students.

The Bruges maps were a bit confusing. Perhaps they could be consolidated a bit.

Bruges is all telling and little discovering on the students' part.

Bruges would be the activity I would most likely exclude.

I would assign Bruges only for my better students.

Eliminate Activity 4 unless it is revised.

Students were saturated with this general topic by this time.

Places remote in time and place often have a weaker appeal.

Few had read the assigned material. Participation was minimal.

The placement of this activity is not right. Up to this point we have really only discussed growth from the viewpoint of site considerations. Now suddenly all sorts of political and economic considerations are introduced. I am afraid that the concepts concerning growth and decline are going to be so scattered that they might escape the student.

The reading is great for those who are familiar with European history and feudalism. It was very confusing for those lacking knowledge in European history. What is needed is more information on Europe before the nation-states. The problem was: too much, too fast.

Possibly a big chart or map to use with a pointing stick while relating ideas to this area and the map. This could help clarify and explain as we discuss. A worthwhile change of attention was needed at this point.

Felt reading was lengthy but not too difficult.

Too much reading, details of European history unfamiliar to students. Would like to have slides or pictures of Bruges to use with class, perhaps, too, make-believe conversations among people at different times would have been better.

More detail through a larger scale on some of the maps might help. There seemed to be some confusion on how and where the sitting of the inn took place. A diagram of this might have eased some confusion.

Teacher Comments on Activity 5 - Portsville

Portsville has reading materials which a below average student can master because he is interested.

There are not enough instructions with the Portsville map. There should be pictures of examples of Portsville in different stages.

Illustrations in the Student Resources were referred to many times during Portsville.

The problem is that there isn't enough Portsville to go around.

Portsville needs enough maps so that there is a maximum of 3-4 students per board.

I felt that this Unit was a worthwhile activity, especially for pupils in the inner city school. They could identify with the activities, especially the Portsville Project.

A discussion of Seattle today following Portsville Part IV seems mandatory to me as a follow-up to prevent dangling at 1900.

I would make a set of transparencies of pictures in student books that could be used in class discussion with regard to patterns found in Portsville. These would be business, residential, industrial, etc.

My students felt very strongly that they were being turned off in the middle of the story. They wanted to know the subsequent development of Seattle. They have demanded a chance to compare their Portsvilles with the real city map. They were most eager to do Minneapolis when they finished the next unit. All of which indicates the worth of the activity. Isn't that what education is all about, the process by which we trigger the pursuit of knowledge?

The enthusiasm of the students wore me out, but it was most satisfying to be worn out.

I have rarely enjoyed teaching anything as much in my entire life. To see my students so eager was a thrill. Even the most detached and unmotivated were caught up in this activity.

At the beginning they saw it as play, but most were seriously involved at the end.

This is by far the high point of the entire unit. This group has gone from a typical geography class to a really turned on group.

There was equal enthusiasm in both my high and low ability classes.

Teacher comments on Activity Five (cont.)

I had a hard time getting them out of the classroom at the end of the period. Intense involvement.

My students were unprepared for the terminology necessary to build Portsville and were therefore frustrated by the activity.

Not only did they learn much concerning the growth of a city, but they learned something of the techniques of cooperation, leadership, and the trial and error process.

The learned many, many generalizations of accessibility, importance of trade, and land use associations.

My students learned more than they would have by conventional methods. I think they know much more about land use, map symbols, as well as site location, growth over time and spatial concepts.

They demonstrated increased reasoning powers daily.

You have to jump all around to find what and when you do each thing.

The guidelines are overly wordy which made preparation time excessively long.

The guide was much more helpful this year than last.

The differences in the coloring on the map were so confusing that they completely forgot about the problem of elevation.

Portsville should be used entirely as an application activity. The students learn the concepts related to accessibility and land use early in the unit and then apply their learnings in building Portsville. As the unit now stands the students get their initial contact with these concepts as they undertake the Portsville activity.

Teacher Comments on Activity Six - Time-Distance

Time-Distance is too difficult even in level of materials in some cases.

Do you feel you should include the second reading on Time-Distance?

Time-Distance could have used more examples for better student understanding.

Educational objectives are not too clear for the Time-Distance activity.

I would use the optional reading and map after Activity 6, but would want the reading to be shorter.

Time-Distance does not seem to fit. Either leave it out or put it into some other unit.

I was surprised at the interest on the part of the students. I expected anything to be dull after Portsville.

Once they got the hang of it they enjoyed it.

Students commented "this is fun."

After so much open-ended work many enjoyed this type of work.

This activity was rather bland. Problem solving after the initial directions was too easy. It was not meaty enough. Could use a heavier problem involving time and distance.

Much to my surprise they were enthusiastic about the ideas.

Coming after the very active Portsville activity this leisurely and quiet activity was very fitting.

The students liked the figuring.

The math involved was easy enough that most pupils were enthusiastic about working out the tables and coming up with the correct answer. Even the slowest pupils could see what we were doing and worked for the correct answers.

I don't think many of the students could see why the activity was important. This was probably my fault.

I'm not sure every one understand the "why" of this activity.

A bit more on utility of time-distance device would enhance interest.

Teacher comments on Activity Six (cont.)

I feel they could learn more if they could see how such information could be helpful to them and how they could use it in every day life.

A great deal more could and should be done with this activity. The impact on the social and economic structure of cities of the location of freeways and schools is hardly hinted at.

We had a good discussion on local time-distance per instructions from the Teacher's Guide.

We also discussed our own relationship to the interstate roads and how different cities could be ranked according to accessibility using the interstate roads.

Instructions are bogged down.

I felt the Guidelines did not spell out the concepts clearly.

Very confused about what students were suppposed to learn from the activity.

Teacher's Guide was not clear and explicit as to procedures in a couple of places such as the most effective use of the computation tables.

Several students made errors because they did not understand the time between B-E and D-E. They misunderstood the sharp turn at the freeway where it turns by the river. They thought it was 10 minutes from point E to the turn plus X to point D. They made the same mistake, that is about 15-20 per cent of them did, between E and the intersection near B.

I felt that discussion questions were excellent.

The high school question went a little flat probably because I didn't draw enough inferences from it.

Because our city needs a new senior high school in the very near future, this lent itself to a more detailed discussion.

The final question on page 52 completely threw them. None of the pupils understood the meaning of perceived distance.

Would note that the last question on page 52 in the Student Manual is not quite clear to all students. Perceived distance is a little vague.

Too abrupt from Portsville to Time-Distance. Needed time to bridge the gap and to explain and discuss the ideas of centrality and accessibility and subsequently relate them to Portsvillle and our own situation.

Teacher comments on Activity Six (cont.)

How does this relate to the recent work with Portsville.

The stories are too elaborate for the material. They obscure and distort the real purpose of the lesson. Students gained little. They only realized that the trips were disorganized.

Most if not all students felt that the reading was too long for what they learned from it. Almost all liked doing the map and felt it taught them enough.

The second part on route selections was a waste of time. Outside of being a map reading excercise there didn't seem to be any value. I could not see the point of the lesson. This period was observed by a geography teacher from England and she didn't see any value in the material either.

I might say I enjoyed it more than any of the other parts. The students were sharply divided. One-third didn't care for it, one-third liked it, one-third thought it was O.K. At the extremes feeling ran high, for and against. I feel it did an excellent job of balancing the concreteness of time and distance.

Student reaction to the readings in route selection was very good. They used this to tie in the question about perceived distance. Students thought that the readings did much to explain why people choose certain ways or routes as they move about the city for various tasks. Good material for inclusion in the whole unit.

Teacher Comments on Activity Seven - Models of City Form

Activity 7 needs more reading materials perhaps.

Activity 7 needs more correlation to student reading and a bit more structure for teachers.

Models of City Form is too difficult even in level of material in some cases.

Models of City Form caused my slow learners a considerable amount of difficulty.

City form could have used more examples for better student understanding.

Part of the reading for Models of City Form is very difficult.

I had some difficulty with Activity 7.

I feel that the directions in the Guideline for the models activity were generally unclear. I had some difficulty even after reading the section several times.

I found the Guidelines to be most helpful with the exception of Activity 7.

I learned with the students for the earlier activities but was not prepared for city form. The fault is in lack of background, but also failure of student materials and visual aids to give the varied examples to get across such abstract ideas.

I was at a complete loss on how best to present models to the class. I felt this was the weakest of all teacher guidelines.

Activity 7 needs more vitality and a clearer presentation of models (ring and sector).

Activity 7 needs a few more diagrams instead of verbal explanations.

More transparencies are needed for Activity 7, particularly some for pages 58, 59 and 62. I like to point at what we are talking about. This is difficult when we only have a book picture or diagram to use.

Activity 7 needs to be more concrete if possible - with some of the material in the Teacher's Guide added in the students' book.

Activity 7 needs more "lead in" explanations with more diagrams to show typical city growth patterns all over U.S., old cities, new etc.

Teacher comments on Activity Seven (cont.)

When ever possible give the students an even greater role in this unit than you have. In city form don't give the students the model and then fit Chicago to it. Give them Chicago and other examples and see if they can arrive at a model.

Since the activity on city models is so basic to an understanding of land use patterns, I would like to spend more time on it. Would it be possible to have at least two other cities used as Chicago was to illustrate models? Would aerial photographs help here? This is so worthwhile, but I felt I was doing it superficially.

Activity 7 is greatly in need of vitality and revision.

Too abstract for my students. The attitude generated was "so what, what's it to me."

They found it fascinating.

This activity has essential material, but is not presented in an appealing way. The students were patient, tolerant, but lacked enthusiasm.

This was for most students the least exciting activity. Partly because it had Christmas vacation with which to compete. We would have enjoyed it much more if we could have been involved at a slower pace.

This activity was uninteresting to most of the students because the procedures for the students were not stimulating. The activity needs more student involvement.

It was a big let down after the two previous activities.

The directions in the Teacher's Guide aren't nearly as good as in the other activities. Directions are scattered throughout the text and for me it was difficult to extract them.

I had thought I would like teaching the activity, but I found either because of my background or the Teacher's Guide that I had a great deal of difficulty getting things to fit together so that I could teach the materials.

The Teacher's Guide is too wordy. While it explains needed concepts, it is not organized in such a way that a teacher can extract a lesson plan with any convenience. The directions for the last part of the lesson were particularly obscure although all were bad except for the first day. Something must be done to make the difference between a map of the area and model clearer to the students.

Teacher comments on Activity Seven (cont.)

After having the pupils read pages 53-58 I asked them to briefly write what they felt were the main ideas. Only five in my two classes came anywhere close. Most had little or no idea what the reading was about.

The students were not clear on parts of the reading as to what they were to do with the maps.

I had difficulty relating the Teacher's Guide and the Student Reading. Questions were suggested and I didn't know why or how to answer them.

Provide illustrations for the models for several different cities.

The overlays that were used in the final part of the activity caused confusion and did not aid the students to see the relationships they were supposed to see.

The response that we expected simply does not occur in these discussion questions.

Use the modulex board and the lego pieces to build the models. Something concrete must be added to the activity to enable the students to grapple with something more than an abstract idea.

APPENDIX C - TABLE ONE

HSGP Student Questionnaire Results for Growth of Cities Unit
1967-1968 Limited School Trials

How does this unit compare with others you have studied in this and other courses?

	N	%		N	%
Much poorer.	33	3%	Somewhat better.	410	43%
Somewhat poorer.	147	16%	Much better.	358	38%

Student Expressions of Interest	Unit as a Whole	Reading Materials	Site Diagrams	American Cities	Local Community	Bruges	Ports-ville	Time Distance	Models
# Responding	964	957	930	875	583	702	968	930	947
# Not remembering	21	29	51	100	222	130	9	49	33
% Dull	9%	16%	10%	11%	13%	23%	5%	19%	17%
% Uninteresting	12%	24%	16%	24%	22%	25%	7%	25%	19%
% Generally interesting	72%	56%	56%	53%	54%	37%	37%	42%	39%
% Extremely interesting	7%	4%	18%	12%	11%	15%	51%	14%	25%
Student Awareness of Objectives									
# Responding	960	950	940	889	594	713	969	936	943
# Not remembering	22	31	37	81	206	119	8	40	30
% Not aware	9%	10%	9%	10%	13%	20%	6%	13%	12%
% Generally not aware	12%	23%	14%	21%	20%	25%	10%	18%	19%
% Generally aware	61%	52%	53%	53%	52%	38%	40%	45%	44%
% Almost always aware	18%	15%	24%	16%	15%	17%	44%	24%	25%
Student Estimate of Own Learning									
# Responding	963	967	930	906	601	727	963	941	954
# Not remembering	11	14	41	62	185	98	9	32	19
% Nothing	3%	6%	6%	8%	9%	14%	2%	10%	8%
% Little	19%	34%	29%	39%	36%	36%	11%	29%	28%
% Fairly much	51%	49%	47%	42%	43%	34%	31%	40%	40%
% A great deal	27%	11%	18%	11%	12%	16%	56%	21%	24%

APPENDIX C - TABLE TWO

SELECTED STUDENT COMMENTS

29. Generally speaking, what should be done to improve this unit?

Don't rush us so. Give us more time to go over things. Whenever we got in a really good discussion about something that was interesting to us but not in the unit we had to quit because we wouldn't get done what had to be done in regular work.

After we finish the entire unit have us go back and do Portsville 1890-1900 over to see if we could change it as a result of the added information from Time-Distance and Models of City Form.

I think one more part should be added on a modern city and why it may grow in the future.

The students should be able to study more about traffic congestions, kind of roads and the terrain of the land in relation to time and distance.

I think more group projects such as the building of Portsville. Also you should have projects on other things which is realistic in the world to day such as the democratic or communistic forms of government and possibly try to build an imaginary country with a form of government the students can create.

Text should be improved by more in-depth study of subjects and applications.

The work that corresponded with the reading materials was more than just an assignment. They challenged the student and his knowledge in most cases. ...the reading was generally interesting in places, but frequently it was dull. If the reading materials could be improved somewhat, the student would probably learn and benefit more.

I didn't like the reading because the questions you asked in the final test were not in the book.

There sometimes is too much information in too little space and it is hard to understand unless you discuss it.

I think you should have the models, cities form and time-distance before Portsville, because I thought that it was pretty dull after Portsville, because I thought Portsvillle was FUN.

There is also too many maps and papers to keep up with so combine these in the book.

Selected Student Comments

29. Generally speaking, what should be done to improve this unit? (cont.)

Generally speaking I thought this unit was very simple and elementary. The answers were generally known in a very short time. There was no challenge, that is one thing that you could improve upon. Most of the activities were not interesting enough.

The reading in the manual could have been improved so that students relate what they read to their own lives and environments.

More discussion.

General comments -- learnings.

That Geography wasn't just studying mountain heights, river lengths, and population statistics. It isn't as dull as some may think it is.

I learned alot that was worthwhile but perhaps the most important was how a city grows, why it does and how people affect the growth of an idea.

I learned that the pattern and environment of a city are changed by unpredictable factors.

I learned that a city must have convenient natural resources near by in order to grow.

The most worthwhile thing that I learned is that it takes an awful lot of ingredients to make a city--site, transportation, people, also the spirit of the people.

32. What was the most worthwhile thing you learned from this unit?

I learned why cities are located where they are, and what and how they grow. These things will help me, in later years, when I decide where I want to live.

I am now starting to realize why things are where they are and am interested in their background and growth patterns. I think that class discussion is one of the most useful tools in the success of this course.

The thing I learned from the unit was that the cities have their own shape and form.

The most important thing I learned from this unit was the way cities grow and why they grow in that pattern (concentric circles) I knew most of the other material already except about Bruges and Portsville.

Selected Student Comments

32. What was the most worthwhile thing you learned from this unit? (cont.

What was worthwhile is working on maps in groups.

The Story of Portsville--Very interesting, educational and worth the while to learn its background. I like the style in which it was presented and I liked the ways with which we could all express our feelings.

It is interesting to see how things like railroads can make a difference in a city. Of course, we knew that before, but building the city model brings it out so much clearer.

I think the worthwhilest thing I learned in this unit was when we put Portsville together. I learned alot why the things must be built where they are.

How a city can grow from just a little city to a large one if it has the right resources and good transportation.

I liked building the city of Portsville. It was fun, and it was alot easier to understand what it was about.

The Story of Portsville. It was educating, interesting and it was fun to do. It seemed that we were learning while playing at building a city.

How basically cities grow and the growth patterns each location takes.

Portsville, I thought it was the most interesting part of all. I learned where most of the industry and commercial places are built in a city.

I think the Portsville project was the best. The forming of your own city was exciting.

The most worthwhile thing I learned from this unit was the building of Portsville. I found out that its not as easy as it looks to put a town or city together.

The actual building of the city. I think you should just give a site to the kids and have them build with no information after they have finished a couple of maps.

How a city is created and continually grows and changes in a sort of pattern which is similar to all other cities.

How much has to be considered in locating a site. And then how a city is developed. I profited most by building the city myself and seeing how many things have to be thought of.

Selected Student Comments

32. What was the most worthwhile thing you learned from this unit? (cont.

How to say what I think without being scared that it is wrong.

Why our fathers and great grandfathers settled where they did.

The most worthwhile thing I learned from this unit was why different things in the city are located where they were.

The most worthwhile thing I have learned in this unit was how cities picked their place to start building.

I learned of the important factors that can make or break a city both in the part and present.

How to work effectively in a group.

That cities just don't spring up any where any time. It takes time.

How cities are chosen (the site) how they get started, and in some cases grow into large prosperous and thriving cities.

The unit as a whole taught me alot. It gave me more of an understanding of how a city grows and starts.

From this unit I learned how to pick a site and generally build it as the city would develop.

I now realize that more goes into choosing a city site than chance. Before I never realized how much work and planning goes into picking a site for a city.

30.-31. What improvements would you recommend (in individual activities)?

Activity 1

Site selection in 1968 should have been much longer. I feel that man should look more to the future than the past because man can always make improvements for generations in the future, but never in the past!

In relation to Site Slection Diagrams I think more information should be given.

Activity 2

I feel that in the activities in which maps were co cerned, the names of the states should have been listed.

Selected Student Comments

30.-31. What improvements would you recommend (in individual activities)? (cont.)

Activity 2

The selection on American cities is interesting, but it is difficult to draw a conclusion from it.

Activity 5

In the Portsville city building map, the main problem I had at first was trying to remember that each square stood for one block instead of one building.

Building the Portsville with the lincoln log things was elementary. It would have saved money and time if we had just one big board with the teacher leading the discussion and buiiding instead of a small group.

The building of Portsville on the board we had. This activity was extremely boaring and should have been done by the class as a whole with a model instead of 4 or 5 in small groups.

Generally I think the unit is on the right track but there needs to be more constructive activity such as what we did with Portsville and the "lego" sets. This make the facts much clearer and gives it reality.

Portsville -- an actual map of the city should be given to the instructor to compare to those built by the students.

Portsville should have a bigger map so we can build up to present day life there.

On the building section of Portsville that maps should be made so as not to give a person the impression he was putting a store on a mountain. Color changes should also tell height differences, otherwise all was o.k.

You should have curved railroads and maybe harbors.

...but I think that more emphasis should have been put on teaching me why cities grow the way they do, than asking me why. Portsville, while it was fun, I feel that it taught me nothing. I feel that it should be dropped, but if I must improve it, I would have smaller groups, better RR pieces (bendable and smaller) and permanent pieces, so that once this piece is set, it can be removed, but not reusable.

Portsville--you should give more material giving information on what to do. The reading in the unit needs to be written more interestingly.

Portsville--more information of rivers, lakes, swamps, etc.

Selected Student Comments

30.-31. What improvements would you recommend (in individual activities)? (cont.)

Activity 6

The graphs and maps really need improvement! The maps where you pick a letter for a city. Not enough letters are given for the best place. Really, there are 26 letters in the alphabet, but why use only five?

Activity 7

Explain by short definition some of the terms used--median, sector.

I was shocked to learn that cities spread out generally in a circle and they kept repeating themselves.

APPENDIX D

ITEM ANALYSIS AND CONTENT DATA

Content	HSGP Students		Control Students		Discrimination Index
	Pre-test	Post test	Pre-test	Post test	(r_{bis})
1. Central business district land is too expensive for single-family houses.	36%	41%	34%	41%	.33
2. Residential land uses occupy the largest land area in cities.	46%	64%	43%	44%	.42
3. Location at a point along a lake is not sufficient information to determine the kind of land use to be expected there.	41%	26%	37%	29%	.19
4. Having residential areas next to heavy industry is a less suitable land use association than three other possibilities: parks with schools, wholesale establishments with retail stores or light manufacturing with railroad yards.	63%	77%	63%	66%	.25
5. Determining which point in three is the most accessible to people at the other points is a function of the time it takes to get from point to point and the number of people to be moved.	59%	72%	64%	59%	.49
6. (Same as Number 5)	22%	36%	20%	25%	.46
7. (Same as Number 5)	17%	30%	17%	20%	.40
8. Neighborhoods with a high population density tend to be close to the center of the city.	54%	66%	57%	52%	.65
9. Construction of a steel plant is likely to result in a larger increase of population for a city than establishment of recreation centers, construction of shopping centers or improvement of the central business district.	45%	56%	44%	45%	.58
10. The intersection of two freeways is a more likely location for a suburban residential area in the 1970's than is the intersection of a railroad and a river, a railroad and a major highway or a canal and a freeway.	51%	67%	53%	55%	.47
11. Land of highest value in the central part of a city is more likely to be used for a ten story office building than for a factory, a public park or a furniture store.	52%	58%	52%	52%	.43
12. Rivers are less likely to be sites for settlement today than they were in 1750 because other forms of transportation have been developed.	72%	88%	71%	76%	.43

Item Analysis and Content Data (cont.)

Content	HSGP Students Pre-test	HSGP Students Post test	Control Students Pre-test	Control Students Post test	Discrimination Index (r_{bis})
13. From information provided on a map it can be interpreted that one point has easier access to natural resources than another one.	27%	32%	23%	28%	.28
14. If a place is a considerable distance from transportation routes, it is a poor place for a settlement.	86%	92%	84%	84%	.46
15. An area on a map symbolized by swamps is probably unhealthy and uncomfortable and therefore a poor place for a settlement.	70%	83%	73%	79%	.48
16. Location at a point where transportation is available, especially for areas of raw materials has a greater potential for urban growth than points lacking these two characteristics.	78%	86%	73%	78%	.39
17. With directions indicating that as many as three answers are possible all four options showed an increment from pretest to posttest.					
17B. Some sites do not turn out to be satisfactory places for settlement because the first settlers probably had to pick the site without sufficient information about its advantages and disadvantages.	73%	87%	71%	83%	.45
17C. Some sites turn out to be unsatisfactory places for settlement because the first settlers probably could not imagine the changes that would take place in the future.	79%	85%	80%	73%	.48
18E. It is impossible to predict the exact site at which a settlement will develop because some of the information needed to select the best site is often unavailable.	55%	77%	50%	59%	.41
18F. It is impossible to predict the exact site at which a settlement will develop because the characteristics of favorable sites for settlements change over time.	81%	82%	90%	79%	.36
18G. It is impossible to predict the exact site at which a settlement will develop because the number of unpredictable factors of site selection of a settlement site.	77%	75%	66%	67%	.47
19B. A site that seemed poor to settlers in 1825 might have seemed good to 1900 settlers because new types of transportation had become available.	81%	93%	80%	81%	.52

Item Analysis and Content Data (cont.)

Content	HSGP Students Pre-test	HSGP Students Post test	Control Students Pre-test	Control Students Post test	Discrimination Index (r_{bis})
19C. A site that seemed poor to settlers in 1825 might have seemed good to 1900 settlers because the latter probably saw new uses for the site.	77%	84%	77%	68%	.57
19D. A site that seemed poor to settlers in 1825 might have seemed good to settlers in 1900 because the latter probably were more able to change certain features of the site.	70%	81%	65%	67%	.53
20F. An addition of a state university and a vegetable canning plant are likely to have a similar effect on a town by bringing people into the area.	79%	90%	79%	80%	.46
20G. A state university and a vegetable canning plant are likely to have a similar effect on a town by increasing the number of job openings in other businesses.	75%	80%	74%	61%	.30
20H. A state university and a vegetable canning plant are likely to have a similar effect on a town by influencing land use patterns.	34%	48%	36%	29%	.33
21. A given diagram of a population pyramid characterizes suburban areas rather than rural areas, central areas of large cities or areas near major city highways in the United States.	36%	59%	38%	41%	.46
22. Based on the interpretation of two diagrams. The highest percentage of new homes in urban areas is likely to be on the outside edges.	47%	65%	47%	52%	.60
23. Based on two diagrams. A given level of income is likely to preceed along a spoke from the inside of a city outward.	63%	64%	59%	62%	.52
24. The diagram of population density from higher density in the center to lower density on the edges supports the view that cities grow from the center outward in all directions at about the same rate of growth.	54%	59%	52%	55%	.36
25. Relationships between residential density and distance from the central business district in North American cities is best shown graphically by a line that relates high population densities to the central part of the city and lower density to outlying parts of the city, rather than the reverse relationship or other possible graphic representations.	28%	37%	24%	25%	.56

Item Analysis and Content Data (cont.)

Content	HSGP Students Pre-test	HSGP Students Post test	Control Students Pre-test	Control Students Post test	Discrimination Index (r_{bis})
26. Single-family residences are likely to occupy less valuable land in the city than high rise apartments, department stores or office buildings.	50%	52%	44%	48%	.36
27. A point at the intersection of two freeways has a better chance for future population growth than a point at the intersection of a railroad and a road, two roads or a road and a freeway.	36%	54%	32%	37%	.53
28. This and the following four items are related to a map of an urban area. Low income housing is more likely to be found in the inner city than in areas surrounding it.	48%	67%	50%	51%	.50
29. The location of a shopping center is more likely to be located at the junction of two roads and at the edge of a growing population center than at a number of other points.	78%	86%	82%	74%	.37
30. Large factories and warehouses are likely to be located at the junction of a railroad and a freeway.	65%	72%	65%	65%	.45
31. A community is most likely to grow rapidly along a freeway moving out of the center of the population center.	56%	64%	58%	55%	.41
32. High income residential land use is likely around a lake that is somewhat accessible to other urban centers.	47%	69%	47%	52%	.64
33. No tabulation of responses was undertaken.					
34. This is an opinion question with three options.					
1. After some locations are eliminated there is likely to be several acceptable places for the location of a city.	69%	74%			.31
2. One place is probably as good as another for the location of a city.	6%	4%			
3. When all available knowledge is applied there is only one proper or correct place for the location of a city.	26%	22%			
35. This is an opinion question with three options.					
1. Agreed that within limits scientific and technical improvements have increased the ways that people can control and regulate their natural environment.	33%	35%			.31
2. Agreed that if people want to they can make any changes in their environment that suits their interest.	15%	13%			

Item Analysis and Content Data (cont.)

	Content	HSGP Students Pre-test	HSGP Students Post test	Control Students Pre-test	Control Students Post test	Discrimination Index (r_{bis})
35.	3. Although people can change their environment slightly, most of the time they must limit themselves to adjusting to it.	52%	53%			

36. Students are asked to list the questions they would ask to obtain information to predict the West African coastal city that will be largest in 1980. They are to choose from among three settlements of equal size.

Pretest and posttest papers of 225 students were examined in some detail.

The questions were classified according to a number of categories that included mention of fresh water, health, population, climate, resources, land uses, transportation, education, government, site characteristics, manufacturing and miscellaneous.

Freshwater showed an increase of 7 to 29 questions from pretest to posttest.
Health showed an increase of 9 to 20 questions.
Population, an irrelevant factor, showed a decrease from 76 to 57.
Climate showed a decrease from 74 to 73.
Resources showed a decrease from 151 to 148.
Land use showed an increase from 9 to 19.
Transportation showed a decrease from 146 to 141.
Education and other characteristics of the people showed an increase from 43 to 44.
Government showed a decrease from 30 to 24.
Site consideration showed an increase from 160 to 220.
Manufacturing showed a decrease from 127 to 107.
The miscellaneous category had a decrease from 69 to 67.

APPENDIX E - TABLE ONE

HSGP Limited School Trials Data 1965 - 1968

(Percentages are either per cent positive or per cent yes)

	1965-66			1966-67					1967-68	
	1	2	8	1	2	3	4	9	2	3
Student interest	75%	85%	51%	83%	92%	65%	80%	81%	79%	72%
Student learning	--	--	--	--	--	--	--	--	78%	72%
Estimate of student interest	1.03	1.21	.40	--	1.02	.29	.52	.72	1.10	.98
Estimate of student learning	.94	1.24	.45	--	1.05	.25	.60	.58	1.09	.94
Pretest mean	41%	42%	35%	43%	42%	36%	38%	31%	54%	
Posttest mean	54%	60%	45%	51%	59%	46%	53%	47%	65%	
Effectiveness with respect to other units	--	--	--	--	--	--	--	--	81%	64%
Readings clear: average student	44%	67%	13%	89%	89%	18%	51%	52%	96%	100%
Readings clear: below average student	--	--	--	43%	44%	4%	16%	6%	35%	45%
Readings well organized	81%	93%	62%	79%	80%	49%	72%	83%	88%	91%
More readings needed	--	--	--	73%	39%	67%	70%	23%	46%	87%
*T.G. useful regarding supplementary readings	15%	54%	12%	43%	54%	17%	30%	67%	33%	12%
Student interest in readings	55%	50%	34%	66%	69%	42%	59%	56%	60%	55%
*T.G. useful regarding objectives	81%	100%	51%	95%	97%	53%	86%	96%	88%	83%
*T.G. useful regarding variety	65%	93%	50%	88%	90%	37%	77%	94%	65%	35%
*T.G. useful regarding background	39%	88%	38%	77%	82%	42%	62%	--	63%	76%
*T.G. overdirective	--	--	--	--	--	--	--	--	12%	32%
*T.G. underdirective	--	--	--	--	--	--	--	--	30%	16%
Subject matter too complicated	--	--	--	5%	8%	65%	30%	40%	47%	0%
Subject matter too simple	--	--	--	20%	13%	4%	4%	2%	12%	32%
Organization of subject matter	--	--	--	93%	97%	45%	87%	93%	85%	71%
Appropriateness of test	--	--	--	68%	72%	47%	65%	54%	93%	83%

*T.G. = Teacher's Guide

APPENDIX E - TABLE TWO

RATINGS OF HSGP ACTIVITIES, LIMITED SCHOOL TRIALS - 1965-1968

Ratings are in terms of teacher estimates of student interest and learning. Ratings are made at the completion of each activity on Teacher Activity Evaluation Forms. A minimum of twenty teachers are involved in each calculation. Calculations are made by assigning the following numbers to each questionnaire response: +2 = very positive; +1 = somewhat positive; -1 = somewhat negative; -2 = very negative. The indicated rating number is the mean of the ratings made by all responding teachers. The rating of a unit is the mean of all activity means.

	Interest						Learning					
	Unit Mean	# 1.50+	# 1-1.5	# .5-1.	# 0-.5	# neg	Unit Mean	# 1.5+	# 1-1.5	# .5-1.	# 0-.5	# neg
965-1966												
Introduction	1.03	0	4	1	1	0	.94	0	3	2	1	0
Intra Urban	1.21	4	13	5	0	0	1.24	2	15	5	0	0
Fresh Water Resources	.40	0	1	2	7	0	.45	0	1	4	4	1
966-1967												
Inside The City	1.02	2	7	8	1	0	1.05	0	12	6	0	0
Networks of Cities	.29	0	0	1	7	0	.25	0	0	1	6	1
Manufacturing	.52	0	1	5	1	2	.60	0	1	5	2	1
Political Processes	.72	1	1	5	1	1	.58	0	1	5	3	0
967-1968												
Growth of Cities	1.10	1	2	1	1	0	1.09	1	3	1	0	0
Geography of Culture Change	.98	0	4	2	1	0	.94	0	3	3	1	0
umber of Activities receiving each rating.		8	33	30	20	3		3	39	32	17	3

APPENDIX E - TABLE THREE

MEAN OF TEACHER RATINGS 1965-1966

Unit	Activity	Interest	Learning
INTRODUCTION		1.03	.94
	1	.48	.45
	2	1.14	1.08
	3	1.34	1.44
	4	.90	1.08
	5	1.00	.91
	6	1.48	.71
INTRA URBAN	(Several Portsville activities raised this mean)	1.21	1.24
	1	1.29	1.35
	2	1.71	1.63
	3	1.51	1.41
	4	1.02	.94
	5	1.44	1.45
	6	1.32	1.34
	7	1.21	1.36
	8	1.36	1.46
	9	1.29	1.36
	10	.91	.95
	11	1.28	1.15
	12	.67	.97
	13	1.48	1.35
	14	1.03	1.25
	15	1.26	1.18
	17	1.16	1.23
	18	1.19	1.17
	19	.93	1.27
	20	.64	.73
	21	1.66	1.36
	22	.61	.69
	24	1.80	1.74
FRESH WATER RESOURCES		.40	.45
	A	.62	.77
	B	1.00	1.11
	C	.16	.58
	D	.54	.58
	E	.33	.70
	F	.19	.23
	G	.30	-.33
	H	.24	.43
	J	.43	.27
	K	.25	.25

APPENDIX E - TABLE FOUR

MEAN OF TEACHER RATINGS 1966-1967

Unit	Activity	Interest	Learning
INSIDE THE CITY		1.02	1.05
	1	1.53	1.40
	2	.79	.91
	3	.96	1.20
	4	1.08	1.21
	5	1.20	1.33
	6	1.22	1.06
	7	.53	.65
	8	.88	1.21
	9	.91	1.11
	10	.64	.89
	11	1.40	1.14
	12	1.52	1.21
	13	1.36	1.10
	14	.42	.50
	15	1.35	1.33
	16	.89	.77
	17	1.17	1.10
	18	.52	.73
NETWORKS OF CITIES		.29	.25
	1	.34	.41
	2	.45	.07
	3	.00	-.24
	4	.60	.83
	5	.36	.19
	6	.23	.32
	7	.20	.23
	8	.14	.25
MANUFACTURING		.52	.60
	1	.87	.91
	2	.62	.92
	3	.71	.71
	4	-.14	.03
	5	1.16	1.19
	6	.69	.78
	7	.28	.42
	8	-.53	-.22
	9	.96	.72
POLITICAL PROCESSES		.72	.58
	1	.71	.72
	2	.29	.25
	3	-.20	.02
	4	1.62	1.43
	5	.70	.60
	6	.99	.54
	7	1.00	.52
	8	.86	.66
	9	.54	.48

APPENDIX F

TEACHER ACTIVITY EVALUATION FORM

_____Teacher's Name Activity Name_____

_____1. How much class time in minutes did the activity take?

_____2. How much more time could have been used profitably?

3. Describe briefly what you did when carrying out the activity that was different from suggestions in the teacher's guide.

_____

_____

_____

_____

_____

_____

_____

_____4. How much did you like teaching the activity?

A. Not at all B. Little C. Generally D. Very much

Comments: _____

_____

_____5. How interesting was the activity for your students?

A. Dull B. Generally not interesting C. Generally interesting
D. Extremely interesting

Comments: _____

_____

_____6. How much do you feel your students learned from the activity?

A. Nothing B. Little C. Fairly much D. A great deal

Comments: _____

_____

_____7. Were you clear about what your students were supposed to learn from the activity?

A. Not clear B. Only somewhat C. Generally D. Very

Comments: _____

_____

(over)

Teacher Activity Evaluation Form

_____8. How confident did you feel about the subject matter in the activity?

A. Not at all confident B. Only somewhat C. Generally D. Very

_____9. How confident did you feel about the teaching procedures required in the activity?

A. Not at all confident B. Only somewhat C. Generally D. Very

_____10. How much does this activity need to be revised?

A. Not at all B. Slight modifications here and there
C. Restructuring of some aspects D. Major revisions before further classroom use

In which of the following areas does this activity seem to have difficulties? A check ( ) will be sufficient indication.

_____11. Clarity of Teacher's Guide with respect to suggested teaching procedures

_____12. Clarity of directions for students

_____13. Adequacy of Teacher's Guide with respect to providing the geographic background you need to teach the activity

_____14. Reading level of the student materials

_____15. Effectiveness of maps, graphs, overlays, quizzes, etc.

16. Please elaborate on any difficulties existing in the activity and suggest needed changes.

HSGP Student Questionnaire for Growth of Cities Unit

_____Student Number

Directions: Your opinions are very important in changing HSGP materials. We need to know what you honestly believe so the final version of the course will reflect what students as well as teachers think. Blacken the appropriate space on the HSGP Questionnaire Answer Sheet for the first 28 questions. Then turn this sheet over and answer questions 29-32.

What did you think of the unit and its activities in terms of their interest to you?

1. The unit as a whole
2. The reading in the unit
3. Site Selection Diagrams
4. American Cities
5. Local Community Site Considerations
6. Bruges, a Medieval City
7. Story of Portsville
8. Time-Distance
9. Models of City Form

Possible Answers:

A. I do not remember it well enough to say
B. Dull
C. Generally not interesting
D. Generally interesting
E. Extremely interesting

Did you feel that you generally knew what you were supposed to learn from the unit and its activities?

10. The unit as a whole
11. The reading in the unit
12. Site Selection Diagrams
13. American Cities
14. Local Community Site Considerations
15. Bruges, a Medieval City
16. Story of Portsville
17. Time-Distance
18. Models of City Form

Possible Answers:

A. I do not remember it well enough to say
B. No
C. Generally not
D. Yes, generally
E. Yes, almost always

How much do you feel you learned from the unit and its activities?

19. The unit as a whole
20. The reading in the unit
21. Site Selection Diagrams
22. American Cities
23. Local Community Site Considerations
24. Bruges, a Medieval City
25. Story of Portsville
26. Time-Distance
27. Models of City Form

Possible Answers:

A. I do not remember it well enough to say
B. Nothing
C. Little
D. Fairly much
E. A great deal

28. How does this unit compare with others you have studied in this and other courses?

A. This one is much poorer.
B. This one is somewhat poorer.
C. This one is somewhat bette
D. This one is much better.

(over)

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HSGP Student Questionnaire for Growth of Cities Unit

Please write in the spaces indicated.

29. Generally speaking, what should be done to improve this unit?

30. Choose the activity that you feel needs the greatest improvement from the list on the other side of this sheet and tell what should be done to improve it.

31. What other activity or activities need improvement? What improvements would you recommend?

32. What was the most worthwhile thing you learned from this unit?

TEACHER FINAL QUESTIONNAIRE FOR UNIT TWO

Teacher's Name_____

Directions: Please react to the question below by checking the appropriate space and/or filling in the blanks provided.

A. Reading Materials

Yes No

___ ___ 1. Do you believe the reading materials are clearly written and understandable for the average student?

___ ___ 2. Do you believe the reading materials are clearly written and understandable for the below average student?

___ ___ 3. Do you believe the reading materials are well-organized from an instructors point of view?

___ ___ 4. Should there be more student reading in the unit?

___ ___ 5. Should there be less student reading in the unit?

6. Suggestions and/or comments about the reading materials:

_____

_____

_____

B. Teacher's Guidelines

Should the Teacher's Guidelines be made more effective

Yes No

___ ___ 7. In providing clear directions for the teacher?

___ ___ 8. In clarifying the objectives of the unit?

___ ___ 9. In suggesting a variety of learning activities?

___ ___ 10. In providing the geographical background you needed to teach the unit?

___ ___ 11. In suggesting supplementary reading materials for students?

___ ___ 12. Did you feel unnecessarily restricted or overly directed by the guidelines?

___ ___ 13. Do you feel the guidelines should provide more direction for the teacher?

(over)

Teacher Final Questionnaire for Unit Two

14. Suggestions and/or comments about the Teacher's Guidelines:

_____

_____

_____

_____

_____

_____

_____

_____

C. The Subject Matter in the Unit

Yes No

___ ___ 15. Is the subject matter of the unit too difficult for students?

___ ___ 16. Is the subject matter of the unit too simple for students?

___ ___ 17. Is the subject matter well organized?

18. Suggestions and/or comments about the subject matter:

_____

_____

_____

_____

D. The Unit as a Whole

19. How worthwhile is each activity?

_____Site Selection Diagrams

_____American Cities

_____Local Community Site Considerations

_____Bruges, a Medieval City

_____Story of Portsville

_____Time-Distance

_____Models of City Form

A. Essential to the unit

B. Could be optional

C. Could be dropped

Teacher Final Questionnaire for Unit Two

20. What do you think was the most worthwhile thing your students learned from the unit?

Yes No

___ ___ 21. Did the unit test adequately measure the content of the unit as you taught it?

22. Please indicate how the test can be improved.

23. What are the impressions of you and your students about the format we have used with this unit? Your comments about the cover, the size of the pages, the layout on the pages, and the type of print used will be appreciated.

(over)

Teacher Final Questionnaire for Unit Two

24. If you were to reteach the unit the way you want to what changes would you make a) in the activities you would teach, b) in the order of teaching the activities and c) in the amount of time you would spend on each activity? Please explain.

25. What additional suggestions do you have for improving the effectiveness of the unit?

26. Compared to other units you have taught, how effective is this unit in its present form?